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In this work Dr. Parry has added a most valuable contribution to obstetric literature, and one which meets a want long felt by those of the profession who have ever been called upon to deal with this class of cases.—*Boston Med. and Surg. Journal*, March 9, 1876.

This work, being as near as possible a collection of the experiences of many persons, will afford a most useful guide, both in diagnosis and treatment, for this most interesting and fatal malady. We think it should be in the hands of all physicians practising midwifery.—*Cincinnati Clinic*, Feb. 5, 1876.

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That he has done this labor thoroughly as far as concerns the especial aspects in which he views the disease, it is unnecessary to state; his work is in all these respects a very valuable addition to medical literature. It is clear, practical, and can hardly fail to be useful to the audience to whom it is addressed.—*The Journal of Nervous and Mental Disease*, Jan. 1876.

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We must again ask the indulgence of our contributors. Although sixteen pages have been added to the present number, we have been compelled, by want of space, to postpone the publication of several communications, some of them actually in type.

The following works have been received:—

Chirurgische Studien und Erfahrungen mit Zugrundelegung der im Italienischen Feldzuge des Jahres 1866, gemachten Beobachtungen, von Dr. CARL FIEBER, Docenten der Chirurgie an der k. Universität zu Wien. Wien, 1875.

Des Néuralgies envisagées au point de vue de la Sensibilité Récurrente. (Pathogénie et Traitement.) Par le Doct. ADOLPHE CARTAZ, Interne des Hôpitaux de Paris. Paris: G. Masson, 1875.

Considerazioni intorno l'ipotesi di nervi che avèbbero per officio d'infrenare la contrattilità o la tonica muscolare e ricordo di alcune sperienze cimentate nel laboratorio fisiologico della R. Università di Roma. Memoria del Prof. SOCRATE CADITI. Roma, 1876.

Saint Bartholomew's Hospital Reports. Vol. XI. London: Smith, Elder & Co., 1875.

Vital Motion as a Mode of Physical Motion. By CHARLES BLAND RADCLIFFE, M.D., F.R.C.P., Consulting Phys. to Westminster Hosp. London: Macmillan, 1876.

On Stethometry. Being an account of a new and more exact method of Measuring the Chest; with some of its results in Physiology and Practical Medicine. Also an Appendix on the Chemical and Microscopical Examination of Respired Air. By ARTHUR RANSOME, M.D., M.A. (Cantab.) London: Macmillan & Co, 1876.

The Cause of the Commencement of Parturition. By CHARLES M. CROMBIE, M.B., M.D. London: J. & A. Churchill, 1875.

Outline Drawings of the Figure for Recording the Situation and Form of Cases of Skin Disease, and for Noting their Progressive Changes under Treatment. Arranged by BALMANNO SQUIRE, M.D. London: J. & A. Churchill, 1876.

The Treatment of Syphilis. By J. L. MILTON, Senior Surgeon to St. John's Hospital for Diseases of the Skin: London: R. Hardwicke.

Annual Reports on Diseases of the Chest, under the direction of HORACE DANELL, M.D., etc., Consulting Phys. to Royal Hosp. for Dis. of Chest. Vol. I. London: Smith, Elder & Co., 1875.

A Criticism of Esmarch's Elastic Compression, founded upon an experience chiefly of Amputations. On the Extirpation of Enlarged Lymphatic Glands. By RUSSTON PARKER, F.R.C.S., Surgeon to the Stanley Hospital. London, 1875.

The Fungus-Disease of India; a Report of Observations by T. R. LEWIS, M.B., and D. D. CUNNINGHAM, M.B., Special Assistants to the Sanitary Commissioner with the Govt. of India. Calcutta, 1875.

The Soil in its Relation to Disease. A Report of Observations by T. R. LEWIS, M.B., and D. D. CUNNINGHAM, M.D.

Wildungen; its Baths and Mineral Springs. By Dr. A. STORCKFR. Translated from the German by CHARLES HARRER, M.D. London: Trübner & Co., 1875.

Extra-Uterine Pregnancy; its Causes, Species, Pathological Anatomy, Clinical History, Diagnosis, Prognosis, and Treatment. By JOHN S. PARRY, M.D., Obstetrician to the Philadelphia Hospital, etc. Philadelphia: Henry C. Lea, 1876.

A Treatise on the Diseases of Infancy and Childhood. By J. LEWIS SMITH, M.D., Physician to New York Infants' Asylum, etc. Third edition, enlarged, and thoroughly revised. With Illustrations. Philadelphia: Henry C. Lea, 1876.

A Treatise on Surgery, its Principles and Practice. By T. HOLMES, M.A. Cantab., Surgeon to St. George's Hospital. Philadelphia: Henry C. Lea, 1876.

The Medical Jurisprudence of Insanity. By J. H. BALFOUR BROWNE, Esq. Second edition, with references to the Scotch and American Decisions. Philadelphia: Lindsay & Blakiston, 1876.

Inhalation in the Treatment of Disease; its Therapeutics and Practice. By J. SOLIS CORREX, M.D., Lect. on Laryngoscopy and Diseases of Chest in Jefferson Med. Coll., etc. Second ed., revised and enlarged. Philadelphia: Lindsay & Blakiston, 1876.

Illustrations of Clinical Surgery, with Descriptive Letter-press. By JONATHAN HUTCHINSON, F.R.C.S., Senior Surgeon to London Hospital, etc. Philadelphia: Lindsay & Blakiston, 1876.

Atlas of Skin Diseases. By TILBURY FOX, M.D., F.R.C.P., Phys. to Dep't for Skin Dis. in Univ. Coll. Hosp. Parts 2 and 3. Philadelphia: Lindsay & Blakiston, 1876.

The Student's Guide to the Practice of Midwifery. By D. LLOYD ROBERTS, M.D., Phys. to St. Mary's Hosp., Manchester, etc. Philadelphia: Lindsay & Blakiston, 1876.

Medical Diagnosis, with special reference to Practical Medicine. A Guide to the Knowledge and Discrimination of Diseases. By J. M. DA COSTA, M.D., Prof. of Practice of Medicine and of Clinical Medicine at the Jefferson Med. College, Phila., etc. Fourth edition, revised. Philadelphia: J. B. Lippincott & Co., 1876.

Transactions of the Pathological Society of Philadelphia. Vol. V. Edited by JAMES TYSON, M.D., Recorder. Philadelphia: J. B. Lippincott & Co., 1876.

Medical Thermometry and Human Temperature. By E. SEGUIN, M.D. New York: William Wood & Co., 1876.

A Manual of General Pathology, for the use of Students and Practitioners of Medicine. By ERNST WAGNER, M.D., Prof. of General Path. and Path. Anat. in Univ. of Leipzig. Translated from the sixth German edition by JOHN VAN DYKE, A.M., M.D., Prof. of Anat. and Hist. in Med. School of Syracuse Univ., N. Y., and E. C. SEGUIN, M.D., Clin. Prof. of Dis. of Mind and Nervous System in Coll. of Phys. and Surgeons, N. Y. New York: William Wood & Co., 1876.

Determination of the Refraction of the Eye by means of the Ophthalmoscope. By EDWARD G. LORING, M.D. New York: William Wood & Co., 1876.

A Pocket Manual of Percussion and Auscultation for Physicians and Students. Translated from the second German edition. By J. O. HIRSCHFELDER. San Francisco: A. L. Bancroft & Co., 1876.

Observations on Re-vaccination during the recent Epidemic of Smallpox in Cincinnati. By WM. B. DAVIS, M.D. Cincinnati, 1876.

Iridectomy, and its Applicability to certain Defects of the Eye. By A. W. CALHOUN, M.D. Atlanta, Geo., 1875.

Massage in Amenorrhœa and Dysmenorrhœa. By DOUGLAS GRAHAM, of Boston, 1876.

A Series of American Clinical Lectures. Edited by E. C. SEGUIN, M.D. Vol. I., No. XI.—On the Diagnosis of Diseases, accompanied with Real or Apparent Hemiplegia, without marked Muscular Degeneration. By H. C. WOOD, JR., M.D. No. XII.—On the Nature of the Gouty Vice. By W. H. DRAPER, M.D. Vol. II., No. 1.—The Principle of Physiological Antagonism, as applied to the Treatment of the Febrile State. By ROBERTS BARTHOLOW, M.A., M.D., Prof. of Theory and Prac. of Med. in Med. Coll. of Ohio. New York: G. P. Putnam's Sons, 1876.

Fifth-Diseases and their Prevention. By JOHN SIMON, M.D., F.R.C.S., Chief Med. Officer of Privy Council of Great Britain. Printed under the direction of State Board of Health of Mass. Boston: James Campbell, 1876.

Insanity in its Medico-Legal Relations. By A. C. COWPERTHWAIT, A.M., M.D. Philadelphia: J. M. Stoddart & Co., 1876.

Navy Department Bureau of Medicine and Surgery. Sanitary and Medical Reports for 1873-74. By Officers of the United States Navy. Prepared for publication, under the direction of the Surgeon-General of the Navy, by H. C. NELSON, M.D., Surgeon U. S. N., Assist. to Bureau of Med. and Surgery. Washington, 1875.

- A Biographical Sketch of John D. Jackson, M.D., of Danville, Ky. By J. M. TONER, M.D., and L. S. McMURTRY, M.D. Louisville, 1876.
- Remarks on Intra-uterine Polypi. By A. REEVES JACKSON, M.D. Chicago, 1876.
- State Boards of Health: Rapid and Automatic Infiltration, with Description of Apparatus; Malpractice; Responsibilities of Surgeons and Physicians. By THAD. M. STEVENS, M.D., Indianapolis, Ind.
- The Genesis of an Epidemic of Puerperal Fever. By WILLIAM T. LUSK, M.D., Prof. of Obstetrics in Bellevue Hosp. Med. Coll. New York, 1875.
- Hermaphroditism, from a Medico-Legal Point of View. By BASILE PORRESIO. Translated from the French by EDW. WARREN SAWYER, M.D. Chicago, 1875.
- On the Cause of Vice-President's Wilson's Death. On Pigmentary Deposits in the Brain, resulting from Malarial Poisoning. By WILLIAM A. HAMMOND, M.D.
- In Memory of Ernst Krakowizer. New York: G. P. Putnam's Sons, 1875.
- A Contribution to the Study of Post-Nasal Catarrh. By BEVERLEY ROBINSON, M.D. New York, 1875.
- Uronology, and its Practical Applications. By GEORGE M. KOBER, M.D. Louisville, 1875.
- The Best Welfare of Invalids seeking the benefits of Climate. By CHARLES DENISON, M.D. Denver, Col.
- Mammitis and Mammary Abscesses treated by Bandaging. Remarks on the Curability of Inflammation (*Mania à potu*). By L. A. DUGAS, M.D., of Augusta, Geo.
- The Treatment of the Scrofulides. By HENRY G. PIFFARD, M.D. New York, 1876.
- A Contribution to the Study of Syphilis of the Nervous System. By R. W. TAYLOR, M.D. Chicago, 1876.
- Femoral Aneurism cured by Direct Compression while the patient was taking active exercise. By BUCKMINSTER BROWN, M.D. Cambridge, 1875.
- Aphonia; its Causes and Treatment. By WILLIAM PORTER, M.D. 1876.
- The Therapeutic Value of Digitalis. By A. PATTON, M.D. Vincennes, Ind.
- Transactions of the American Neurological Association for 1875. New York, 1875.
- Proceedings of the Medical Association of the State of Arkansas, November, 1875.
- New Jersey Medical Society (1766 to 1800) Transactions. Newark, 1875.
- Transactions of the Medical Society of New Jersey, 1875. Newark, 1875.
- Transactions of the Kentucky State Medical Society, 1875. Louisville, 1875.
- Transactions of the Medical Society of the District of Columbia, July and October, 1875. January, 1876.
- Transactions of the Texas State Medical Association. April, 1875.
- Transactions of the Colorado Territorial Medical Society, 1874 and 1875.
- Transactions of American Ophthalmological Society, 1875. New York, 1876.
- Proceedings of American Pharmaceutical Association. 1875. Philadelphia, 1876.
- Proceedings of American Association for Cure of Inebriates, 1875. Baltimore, 1875.
- Proceedings of Medical Society of County of Kings, Brooklyn, N. Y. March, 1876.
- Report of Board of Health of California, for 1874 and 1875. Sacramento, 1875.
- Report of the Longview Asylum for 1875. Cincinnati, 1875.
- Report of Northern Hospital for Insane, Oshkosh, Wisconsin. Madison, 1875.
- State Hospital for the Insane, Danville, Pa., 1874-75. Danville, 1875.
- Report of the Trustees of the State Lunatic Hospital at Northampton, Oct. 1875.
- Report of the Pennsylvania Hospital for the Insane, 1875. Philadelphia, 1876.
- Report of the Butler Hospital for the Insane. Providence, 1876.
- Report of the Board of Health of the State of Georgia, 1875. Atlanta, 1876.
- Report of Massachusetts Charitable Eye and Ear Infirmary, 1875. Boston, 1875.
- Report of the Children's Hospital, 1875. Boston, 1876.
- Report of St. Michael's Hospital, Newark, N. J., 1876.
- Report of the New York Eye and Ear Infirmary. New York, 1876.
- Report of the Iowa State Penitentiary at Fort Madison, 1875. Des Moines, 1876.
- Report of the Kentucky Penitentiary, January, 1876. Frankfort, 1876.
- Report of the City Physician and Registrar of Vital Statistics of Knoxville, East Tennessee, for 1875. Knoxville, 1876.
- Report relating to the Registry of Births, Marriages, and Deaths in the Commonwealth, for 1874. Prepared under the direction of the Secretary of the Commonwealth. With Editorial Remarks by F. W. DRAPER, M.D., Lecturer on Hygiene in Harvard University. Boston, 1876.

The following Journals have been received in exchange:—

- Medizinische Jahrbücher. Heft. IV., 1875.
 Deutsches Archiv für Klinische Medicin. Bd. XVI., Heft. 5 u. 6; Bd. XVII. Heft. 1, 2 u. 3.
 Archiv der Heilkunde, 17 Jahr., 2 u. 3 Heft.
 Archiv für Anatomie, Physiologie und Wissenschaftliche Medicin, 1875, Nos. 3, 4.
 Centralblatt für die Medicinische Wissenschaften. Nos. 52 to 55, 1875, and 1 to 9, 1876.
 Allgemeine Wiener Medizinische Zeitung. Nos. 49 to 52, 1875, and 1 to 8, 1876.
 Deutsche Medicinische Wochenschrift. Nos. 1 to 8, 1876.
 Bibliothek for Læger. VI. 1.
 Nordiskt Medicinskt Arkiv. Bd. VII., No. 21.
 Upsala Läkareförenings Förhandlingar. Bd. XI., Haftet 1, 2, und 3.
 Giornale Italiano delle Malattie Veneree e della Pelle, December, 1875.
 Annali Universali di Medicina e Chirurgia. Nov., Dec., 1875; January, 1876.
 L'Imparziale. Nos. 23, 24, 1875, and 1 to 4, 1876.
 Annali Ottalmologia. Anno IV., Fasc. 4.
 Archives Générales de Médecine. Jan., Fev., Mars, 1876.
 Revue des Sciences Médicales en France et l'Etranger. Jan. 1876.
 Archives de Physiologie Normale et Pathologique. Octobre to Decembre, 1875.
 Annales de Dermatologie et de Syphiligraphie. Vol. VII., Nos. 1, 2.
 Annales des Maladies de l'Oreille et du Larynx. Decembre, 1875, Mars, 1876.
 Gazette Hebdomadaire de Médecine et de Chirurgie. Nos. 50 to 53, 1875, and 1 to 9, 1876.
 L'Union Médicale. Nos. 144 to 152, 1875, and 1 to 27, 1876.
 Le Progrès Médical. Nos. 46 to 52, 1875, and 1 to 9, 1876.
 Le Mouvement Médical. Nos. 50 to 52, 1875, and 1 to 9, 1876.
 La Tribune Médicale. Nos. 381 to 391, 1876.
 Revue Scientifique de la France et de l'Etranger, Nos. 24 to 35, 1876.
 The Retrospect of Medicine. July to December, 1875.
 The British and Foreign Medico-Chirurgical Review, January, 1876.
 The Lancet. January, February, March, 1876.
 The Medical Times and Gazette. January, February, March, 1876.
 The British Medical Journal. January, February, March, 1876.
 The London Medical Record. January, February, March, 1876.
 The Sanitary Record. January, February, March, 1876.
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 The Journal of Anatomy and Physiology. January, 1876.
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 The Canada Medical Record. January, February, March, 1876.
 L'Union Médicale du Canada. Dec. 1875, Jan., Fev., 1876.
 The Canadian Journal of Medical Science. January, March, 1876.
 The Canada Lancet. January, February, March, 1876.
 Public Health Magazine. January, February, 1876.

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2. Transactions of the Medical Society of New Jersey, May, 1875. 8vo. pp. 250. Newark, N. J., 1875.	
3. Transactions of the Kentucky State Medical Society, April, 1875. 8vo. pp. 48.	
4. Proceedings of the Medical Association of the State of Arkansas, Nov. 1875. 8vo. pp. 76.	
5. Transactions of the Kansas Medical Society, May, 1875. 8vo. pp. 82.	
6. Transactions of the Medical Society of the District of Columbia, 1875. 8vo. pp. 94.	
7. Transactions of the Texas State Medical Association, April, 1875. 8vo. pp. 223. Columbus, Texas.	
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XXXII. Cyclopædia of the Practice of Medicine. Edited by H. Von Ziemssen, Professor of Clinical Medicine in Munich, Bavaria. Vol. V. —Diseases of the Respiratory Organs, by Prof. Juergensen, of Tübingen; Prof. Hertz, of Amsterdam; Prof. Ruchle, of Bonn; and Prof. Rindfleisch, of Würzburg. Translated by Gerald F. Yeo, M.D., of London; A. Brayton Hall, M.D., Francis Delafield, M.D., Frank P. Foster, M.D., Edward Frankel, M.D., John C. Jay, Jr., M.D., of New York; and Edward W. Schauffler, M.D., of Kansas City. Albert H. Buck, M.D., of New York, Editor of American edition. 8vo. pp. xiv., 712. New York: William Wood & Co., 1875. .	543
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- XXXV. Outlines of Practical Histology. Being the Notes of the Histological Section of the Class of Practical Histology, held in the University of Edinburgh. By Wm. Rutherford, M.D., F.R.S.E., Professor of the Institutes of Medicine in the University of Edinburgh. 8vo. pp. 72, interleaved. London: J. & A. Churchill, 1875. 548
- XXXVI. The Student's Guide to Human Osteology. By W. W. Wagstaffe, F.R.C.S., Assistant Surgeon to, and Lecturer on Anatomy at, St. Thomas's Hospital, etc. pp. xxvii., 319. Philadelphia: Lindsay & Blakiston, 1875. 548
- XXXVII. Lectures and Essays on the Science and Practice of Surgery. By Robert McDonnell, F.R.S., etc. Part II. The Physiology and Pathology of the Spinal Cord. pp. 107 to 320. Dublin: Fannin & Co., 1875. 550
- XXXVIII. On Compression of the Fœtal Head by the Forceps and Cephalotribe. By Hugh L. Hodge, M.D., Philadelphia. Reprinted from "*Journal of Obstetrics*" for May, 1875. 8vo. pp. 29. New York: William Wood & Co. 551
- XXXIX. The Cholera Epidemic of 1873 in the United States. Government Printing Office, Washington, D. C., 1875. 8vo. pp. 1053. 552
- XL. A Treatise on the Diseases of Infancy and Childhood. By J. Lewis Smith, M.D., Physician to the New York Infants' Hospital, etc. etc. Third Edition, enlarged and thoroughly Revised, with Illustrations. 8vo. pp. 724. Philadelphia: Henry C. Lea, 1876. 555
- XLI. Medical Diagnosis with Special Reference to Practical Medicine. A Guide to the Knowledge of Discrimination of Diseases. By J. M. Du Costa, M.D., Professor of Practice of Medicine and of Clinical Medicine at the Jefferson Medical College, Philadelphia; Physician to the Pennsylvania Hospital, etc. etc. Illustrated with Engravings on Wood. Fourth edition, revised. 8vo. pp. 835. Philadelphia: J. B. Lippincott & Co., 1876. 556
- XLII. A System of Midwifery, including the Diseases of Pregnancy and the Puerperal State. By William Leishman, M.D., Regius Professor of Midwifery in the University of Glasgow, Physician to the University Lying-in Hospital, etc. etc. Second American, from the second and revised English edition, with additional notes by John S. Parry, M.D., Obstetrician of the Philadelphia Hospital, Vice-President of the Philadelphia Obstetrical Society, etc. 8vo. pp. 766. Philadelphia: Henry C. Lea, 1875. 556
- XLIII. Scarlatina Statistics of the United States. By Thomas C. Minor, M.D. 8vo. pp. 55. Cincinnati: Robert Clarke & Co., 1875. 557
- XLIV. Transactions of the Pathological Society of Philadelphia. Vol. fifth. Edited by James Tyson, M.D., Hospital Professor of Pathological Anatomy and Histology in the University of Pennsylvania, etc., Recorder of the Society. 8vo. pp. 258. Philadelphia: J. B. Lippincott & Co., 1876. 558
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- XLVI. In Memory of Ernst Krakowizer. Small 4to. pp. 68. New York: Putnam's Sons, 1875. 559
- XLVII. The Popular Health Almanac for 1876. Edited by Frederick Hoffmann. 12mo. pp. 44. New York: E. Steiger, 1875. 560
- XLVIII. Studi ed Osservazioni intorno ai Malati, accolti in un quinquennio nella Clinica Medica di Firenze, diretta dal Prof. Pietro Cipriani. Per il Dott. Gaetano Leopardi, aiuto alla cattedra suddetta. Volume primo. Malattie Costituzionali. Firenze: Tipografia di G. Barbèra, 1875.
- Notes and Observations concerning Disease, made in the course of five years, in the Medical Clinique of Florence, service of Prof. Pietro Cipriani. By Dr. Gaetano Leopardi, Assistant Professor. Vol. I. Constitutional Diseases. 8vo. pp. 281. Florence: G. Barbèra, 1875. 560

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THE
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ART. I.—*Neurotomy*. By S. WEIR MITCHELL, M.D., of Philadelphia.
With an Examination of the Regenerated Nerves, and Notes upon Neural Repair, by R. M. BERTOLET, M.D., Pathologist to the Philadelphia Hospital. (With ten wood-cuts.)

I HAVE long been of the opinion that many of the failures to relieve pain permanently by nerve sections are due to the fact that very often, and more speedily than has been generally believed, the nerves in man repair damages, and reconnect with the centres the parts which it was desired to isolate. To settle this question, I have collated one hundred and twenty cases of nerve sections and exsections. But few of these are well reported, and the surgeons seem to have been usually satisfied with stating only the immediate results. One was cut because of chorea, the rest to relieve neuralgia.

The immediate results were total relief in ninety-six cases. In eight of these pain, great or less, came back within three weeks, a period probably too brief for nerve repair. There must, therefore, be some reason why a section thus cures pain without curing it permanently, and the cause may lie in some alteration which the shock of an operation effects in the sensorium; for in at least one case where there was disease of one nerve (median), section of another, the musculo-spiral, caused total relief for eight days only. The loss of a tooth will also arrest for a time in some cases neuralgia of the supra-orbital nerve, due to an intracranial lesion, and I know of many cases in which firm pressure on one branch of the fifth nerve relieves or arrests pain in a remote branch of the same nerve.

Twenty-five cases were still well at the close of a year, but of these five relapsed within two years; but of the ninety-six, twenty-seven had their neuralgia again within periods varying from one month to eighteen. As to the rest, the details are incomplete, and we learn nothing of their future. In four, permanent relief came of secondary operations.

Surgeons have often hesitated to admit that a large proportion of these failures are due to regeneration of the cut nerve; but when we view these statistics in the clear light cast upon them by the three cases of well-proved regeneration which this paper reports, I think it will be no longer doubtful that a large percentage of failures must be laid to this cause. As yet we do not know how soon a nerve in man may repair itself, but in my case this took place within six months, and in Dr. Hodge's cases in a few weeks in one and within a year in the other. The best test of repair is not merely the return of feeling in areas where it was lessened or lost owing to section, for it is now sure that in some way, by terminal or current anastomoses, and by direction of attention to the regions of dulled sensation, this may improve irrespective of nerve repair, while if palsied muscles recover power, there is no conceivable mode in which this could occur save by restoration of the cut nerve. To insure permanent relief, I suggest that in all nerve divisions as much as possible of the nerve should be taken away, and the digital end doubled on itself and secured in this position. The cautery has been used, with the idea of making reunion difficult, but a proper conception of the methods of repair would have taught the surgeon that there was no gain in this measure. Perhaps the safest plan would be to turn the digital end of the nerve aside, and bury it in the body of an adjoining muscle. The following cases illustrate the position here assumed.

CASE I. In the July number of this Journal for 1874, I reported a case of section of the median nerve. To it I beg to refer the reader for full details. The original injury was in the median territory of the right palm, and for relief of neuralgia thence arising. Dr. John H. Brinton divided, at my request, the median nerve in the forearm. This operation removed three-fourths of an inch of nerve, and as the lower end of the cut nerve was doubled on itself, and secured by a thread to prevent reunion, the interval betwixt the nerve ends became by measure $2\frac{1}{2}$ inches.

On reading the case the reader will observe that in November, 1871, the justly distinguished surgeon to the King of Italy, Dr. Sapolini, for reasons which seem to me to have been ample, cut down on the musculospiral nerve in Miss T.'s arm, and removed one inch of it. This operation eased the median pain, which, however, came back in eight days suddenly. The section caused remarkable atrophy of the extensor group in the forearm, with entire loss of power to extend the wrist, and to use the common extensor of the fingers. The loss of sensation in the hand was certainly but small, was indeed so slight as to amaze Miss T.

And now comes the new point of interest in this most instructive case. As early as April, 1872, certainly within *six months* after section, Miss T. observed a notable enlargement of the wasted extensors, and at the same time a slight power to extend the wrist and fingers. In June, 1872, she could fully extend the hand to a level with the arm, but not beyond this. In the paper I quote I said that in February, 1873, she could not extend the wrist; it should have been—fully extend. At this date there was normal touch in all of the radial region in the hand; that is, a feather touch was felt everywhere, and was correctly referred.

The median section was made March 2, 1873. I saw Miss T. again in the summer of 1874, about two years and seven months after Dr. Sapolini's section of the musculo-spiral. During 1873 and 1874, the whole of the function of the extensor group in the forearm returned; no action was missing, and there was nearly normal power, that is, in the winter of 1874. Miss T. could perfectly extend the hand, and she could do this with a close approach to normal force, but could not keep up extension as long as she could with the left limb. It was, I believe, in January, 1874, that she began to have pain in the line of Dr. Sapolini's incision over the musculo-spiral nerve, and soon after excessive pain in the radial region of the back of the hand. This was accompanied by very great swelling with redness and heat, so that it was again and again supposed an abscess might form. This false phlegmon went and came; went with lessened pain, and came anew with great increase of torment. At length the use of leeches followed by ice to the scar did away with the swelling in the hand, but the pain in varying amount was never quite absent.

I had become of course fully satisfied that reunion of this nerve had taken place, and it seemed to me probable that the new trouble lay in this reconstructed tissue. I think now that a little reflection upon the mode of re-union of nerves might have led me to a different view, but the situation was so novel as to offer no clinical precedent. A number of measures, mild or not, were tried, and vainly tried, to ease the pain. When at last Miss T. was in grave danger of constant habitual resort to narcotics, I yielded to her wish to have cut anew this reunited nerve, my decision being influenced by the failure of other means of relief, and being made more easy by the fact that the muscles within the control of the musculo-spiral nerve were again becoming feeble, so that it seemed likely that before long not only might there be an entire palsy of this nerve, but also that the pains might become permanent. Accordingly, after consultation with Drs. J. H. Brinton and Keen, the former cut down through Dr. Sapolini's old incision and once more divided the nerve.

We found the new nerve, as presented in the accompanying wood-cut, Fig. 1, running between two buttons of neuro-fibrous tissue which marked above and below the site of the two ends of the divided nerve. Dr. Brinton removed the whole just as it is figured and described by Dr. Bertolet.

The result of this operation was a partial relief of pain, but within a few days the ease increased, until at present, June, 1875, there is no pain at all.

Fig. 1.

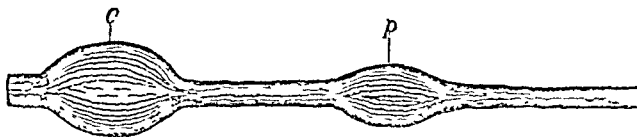


Fig. 1. Portion of musculo-spiral removed from Miss T.'s arm. Length nearly three inches. *c*, central, *p*, peripheral swelling. The distance between *c* and *p*, the regenerated portion, is one inch.

As to whether or not the future will bring back to this much-suffering woman a renewal of torment I cannot say. If there be no new pain within a year I shall feel safe, and at least, I am reasonably sure that there can now be no re-growth of the nerve, since both the length of the portion taken away (three inches) and the situation around the bone seem

to make a reunion most unlikely. Apart, however, from the therapeutics of the case, it presents characters of such interest as set it aside from most other cases of neurotomy, and give to its physiological aspects a value so novel that I have thought it proper to discuss these at length and to ask of Dr. Bertolet the most careful study of its anatomical peculiarities.

There have been many cases of nerve sections in man by accident or design where the repair of the nerve has been suspected or proven by well marked return of physiological power, but the cases in which there has been occasion to examine the cut nerve after death are exceptionally rare. So far indeed as I can learn, and I shall be glad to be corrected if I be in error, this present case is the first one in which a nerve once cut has after repair been cut a second time so as to remove the restored portion. In this instance repair must have begun in a few months, or rather actually within six months there was available neural connection between the two nerve ends, and partial repair of wasted muscles. When I saw her first this process was still going on, and the muscles were recovering power. Before we cut the median, and since, I frequently faradized the musculo-spiral nerve above the section and threw the extensors into play. When at the second operation the nerve was laid bare, I repeated this test with like success, putting the conductors on the exposed nerve itself. Of the condition of the new nerve and of the terminal buttons I shall leave Dr. Bertolet to speak, remarking only that there were no pathological conditions in the new nerve to account surely for the pain, and that, if of peripheral birth, it must be referred to the state of the terminal buttons.

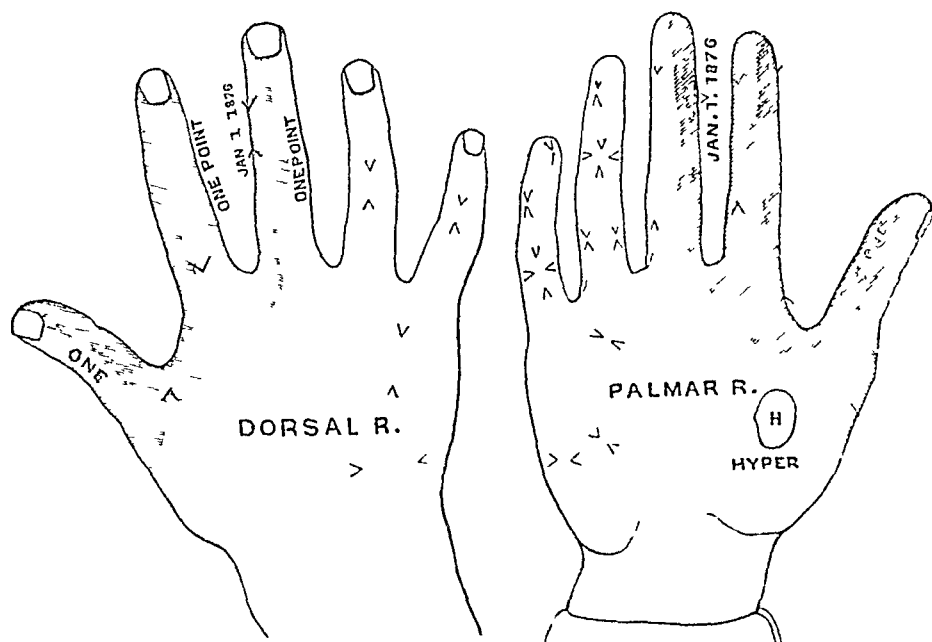
We next come to the point of most interest in this case, which has decided so many questions. Some of my readers will recall the positive manner in which I have stated elsewhere that we know as yet but little about the surface distribution of nerves. The present case yet further illustrates my position, and is, in fact, a clear and perfectly satisfactory proof that the facts which Arloing and Tripier proved to exist in the dog, are no less true of man. These observers have shown that in dogs any single nerve left uncut will leave the paw of the dog more or less sensitive in its every part. This conclusion I have always felt nearly sure would be found to apply to man. In the present case there was cut the median at the middle arm, leaving above the point cut the muscular and anterior interosseous branches, but cutting off the origin of the palmar-cutaneous. Then later the musculo-spiral was cut high up, so that this hand has left only the ulnar and the few filaments which come to it from the musculo-cutaneous and the internal cutaneous. In my previous account of the case (*op. cit.*) I described with extreme care the amount of loss of feeling from section of the median nerve. To this I refer the reader for full details, with this comment: Two weeks after section of the median there were large regions of the hand into which a needle could be thrust deeply without causing pain. After section of the musculo-spiral nerve

I waited some three or four weeks, and then examined the hand as to its loss of sensation. I found, in the first place, what did not greatly surprise me, that there was a notable preservation of feeling, but I found, also, that in the median nerve territory there had been, in the long period which had elapsed since it was isolated, an improvement so great that nowhere was there a place into which you could thrust a needle deeply without causing pain. Sense of pain was lessened, but not lost, as it had once been. This recovery might have been considered due to restoration of the cut median, despite our great care to prevent it; for we not only took out a piece, but so disposed of the question by doubling the lower nerve end on itself as to leave it thus with an interspace of $2\frac{1}{2}$ inches. Restoration then was unlikely, and, besides, had it taken place, the median muscles in the hand would have grown anew, and responded to the will and to the battery—but they did not; and so we must seek other theories for an explanation of this astonishing change.

And now to look at the whole amount of sensory loss in this hand, to which ran alone the filaments of the internal cutaneous, musculo-cutaneous, and the ulnar. By all the old rules of belief, we should have found feeling annihilated somewhere, but really it is nowhere absent. I give below two diagrams of the palm and dorsum, made by Dr. Neff, resident physician at

Fig. 2.

Fig. 3.



Figs 2 and 3 Light lines indicate loss of sensation to feather touch, dark lines, impairment to touch of needle. n, Fig 3, a small space where a touch is said to cause pricking sensations

the Infirmary for Nervous Disease, Philadelphia. Dr. Neff has ingeniously represented the facts on the diagram, so as to save me a large amount of verbal explanation. Dr. Neff's diagrams have been carefully tested by

re-examinations made by my colleague, Dr. Geo. Gerhard, and by me; and I mention this because to study and report accurately the true state of sensation as to touch and pain is in itself no easy task. At the Infirmary for Nervous Disease we now resort to the-e tests: the needle, to determine surface feeling, and deeper sensibility; the touch of a feather tip for touch and localizing capacity; and, lastly, the compass points for delicate appreciation of slightest disturbances of tract.

Sensation as tested with the Compass Points.

RIGHT HAND.

LEFT HAND.

Index and Middle Fingers.

Radial side.	Radial side.
Points cannot be distinguished as two.	Normal; the distance at which the compass points are recognized as two, is 5 lines.
Ulnar surface.	Ulnar surface.
The points are felt as two at the distance of $1\frac{1}{2}$ inches.	Normal (4 lines).
Dorsal surface.	Dorsal surface.
Compass points are not felt as two.	Normal, or nearly so, as at the distance of 7 lines two points are felt

Thumb.

Only one point is distinguished. Normal.

Ring and Little Fingers.

Slight loss compared with left hand.	Compass points felt at $\frac{1}{2}$ of an inch.
Points felt at $\frac{3}{8}$ inch.	

Some loss on the dorsal surface of right hand, the points being recognized as two at the distance of $\frac{3}{4}$ of an inch; whereas on the left dorsum they are distinguished at the distance of $\frac{1}{4}$ of an inch.

For the exact sites of these comparative tests, see arrow-heads on the diagrams.

From the above it would appear that there is some slight loss of sensation extending over the whole of the right hand—not quite as marked, however, in the ulnar distribution as elsewhere.

Dec. 30, 1875, I re-examined this hand. While she has still in all parts of it sense of pain to a needle prick, she has now more power than ever to feel a touch. If it be a little rough, or the pencil-tip or feather be moved a little, she feels it, after a moment, in every part of the entire hand. On the median side of the palmar face of the third finger the compass points are felt as two when three and a half lines apart; whilst last year, at this place, only one point could ever be recognized. But touch on the palmar face of the second finger is erroneously referred to the palm or the thumb; and touch on the thumb is felt as if it were on the second finger. In some other spots of the median territory the references are incorrect by half an inch, or the recognition is tardy. At the finger-ends of the first, second, and third fingers back and front, the touch is felt as if it prickled. To cut the nails gives pain, and while touch, if not too light—and a needle prick always—can be felt throughout the radial region, nearly everywhere in it is touch felt as an annoyance. Of late, also, there has been a dull pain referred to the dorsum of the hand.

While the sense of pain and touch is so much bettered, the appreciation of temperature is almost lost except for extreme heat; ice being felt at first as heat or pain, and only in some places and after longer contact as cold; warmth and coolness, in slight degrees of intensity, are unfelt as such.

She is aware of the position of the fingers when her eyes are closed, and the parts are actively or passively moved. As to muscular movement, Miss T. can slowly but perfectly close all the four fingers in flexion, and can more slowly but entirely open them all in extension. The thumb has scarce any motion. The thumb muscles are greatly wasted, and the ulnar adductor, the only one intact, is too feeble to be of use alone. The extension of the fingers is limited to the second and third phalanges, and is ready and quicker in the fourth and fifth digits, but slower in the second and third.

No form of electrical current direct or indirect stirred the median thumb muscles of the hand, and for this and other reasons stated above, I cannot believe that the median nerve has been regenerated, so that we are forced to look to the coarse and fine anastomoses, whether current or terminal, and to recurrent fibres of the median and radial to explain the gradual gain in sensory power. At present our anatomy is incompetent to give us full help—as any anatomist knows who will read what I have said above and then try to point out the anastomoses which are to account for the gain—but whencesoever this comes, it comes slowly, and we learn by degrees to use the new channels.

CASE II. *Dr. Hodge's Case of Neurotomy, Digital Branch of Ulnar Nerve, and Digital Branch of Median Nerve, 4th Finger of Left Hand.* Notes by Dr. Hodge.—In April, 1874, I excised about one inch of the digital branch of ulnar nerve on the 4th finger of the left hand of Mrs. M., a patient of Dr. George A. Rex, on account of intense pain over the ulnar side of the dorsal region of the last phalanx of this finger. During the last four years this pain had caused great suffering and sleeplessness; but it had existed with more or less intensity for about 15 years. She believed the cause to be carrying a bucket filled with water. This produced at the time a feeling of numbness in the finger, which remained for two or three days, but after this had passed away there was no inconvenience for several months. When the cold weather came the pain began, and then continued at all seasons of the year.

The nerve was divided at about the middle of the second phalanx, and about one inch removed, the dissection being carried down to the smallest filament visible. The operation was followed by temporary relief. The pain however returned, and soon regained all of its old severity. After having tried for 18 months many plans to obtain relief, Dr. Rex again sent her to me. Upon examination, I found that the area of pain had increased, and had extended more over the back of the finger, and that the sensibility to touch had returned in the parts supplied by the divided nerve. In my opinion the nerve had reunited, and I proposed to again excise a portion of the digital branch of the ulnar nerve, and if possible turn back the distal end in its course so as to prevent reunion, and to extend the operation by excising a portion of the digital branch of the median nerve on the other side of the finger, and to dissect away and remove all the skin of the painful region, and, as this involved a part of the matrix of the nail, to remove also the nail and cauterize the matrix.

The operation was done Nov. 27th, 1875. I found the ulnar nerve reunited with a bulb on the proximal portion, and the other extremity

adherent to and closely incorporated with the scar of the former operation. The accompanying drawing (Fig. 4) represents the appearance of

Fig. 4.

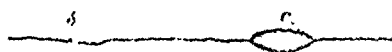


Fig. 4. Dr. Hodge's case of neurotomy of ulnar branch of fourth finger of left hand. *c*, central neurovascular swelling; *d*, distal end adherent to the scar.

the nerve. After the wounds had healed, Dr. Rex carefully examined the areas of sensibility on both dorsal and palmar surfaces. The results are shown in the accompanying drawings, Figs. 5 and 6. The patient, thus far, January 14th, remains free from pain.

Fig. 5.

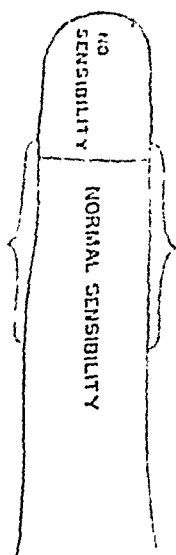
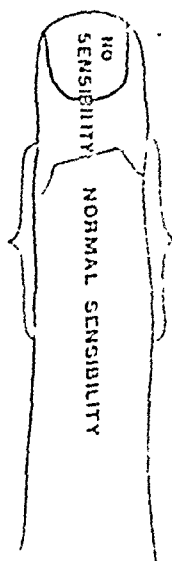


Fig. 6.



Figs. 5, Palmar surface, and 6, Dorsal surface. Extent of portion excised, $1\frac{1}{2}$ inch. The brackets indicate the positions of excised nerves.

CASE III. On Dec. 5th, 1874, says Dr. Hodge, I removed about two inches of the radial nerve in the back of the forearm, after it comes out from under the tendon of the supinator longus. The operation was done on account of long-continued and persistent pain in the back of the hand accompanied at times with great redness and swelling. The patient was fifteen years of age. After the operation she was perfectly free from pain, and had no sensation in that part when touched. In about six weeks the pain gradually began to return; a few weeks later the tactile sensation also returned. The pain grew worse and became as severe as at any time before the operation. Nothing gave relief, although every means was employed in consultation with Dr. S. Weir Mitchell. As the tactile sensation had returned as well as the pain, it was evident to us both that the nerve had probably reunited, and that the pain was not merely subjective and referred to the old part. Therefore, on October 20th, I repeated the opera-

tion, and found the nerve, as expected, reunited, with the bulbs of reformation as in Fig. 7. The distance between the bulbs was one inch and a

Fig. 7.

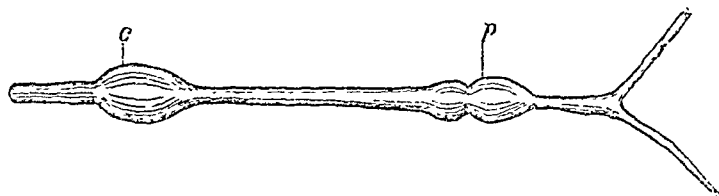


Fig. 7. Radial nerve in Dr. Hodge's case. *c*, central, *p*, peripheral swelling. Entire length of excised portion three inches. Distance between *c* and *p* one and one-fourth inch.

quarter. At this last operation I removed three inches of the nerve and turned back the ends of the distal extremity so as to form a loop, and thus endeavoured to prevent another restoration. This operation, as well as the preceding, was done entirely outside of the deep fascia, and therefore no motor filaments were removed, and no power in motion of the hand or fingers is wanting, nothing being lost but sensation. The areas of sensibility are shown in the accompanying drawing by Mr. Goldsborough from careful examination made two weeks after the operation, and repeatedly tested by Dr. Hodge himself. The parts described as having lost sensation (marked by darker lines) were insensible to any needle prick—the region of lessened sensation (marked by lighter lines) was insensible to a very light touch, or else felt it doubtfully, or slowly, or misplaced it, but could feel the needle. The sensation in the fingers beyond the lines given was not then studied with compass points, but it as well as the rest of the dorsum was most carefully tested by light touch and by comparison found to be not worse than in the sound hand. After the first section the lack of feeling existed further out on the fingers than after the latter section, the results of which are seen in Fig. 8.

Fig. 8.

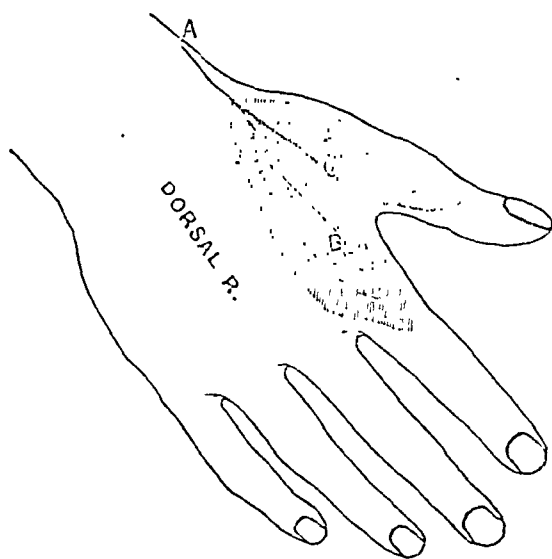


Fig 8. All that portion of radial nerve between A and B and A and C was removed.

On the 3d day the wound was healed, save for a small spot at the wrist which became an irritable ulcer, and has now extended an inch up the line of wound, Jan. 19, 1876.¹ On the 8th day after operation, an herpetic eruption broke out on the radial side of the healed incision—high up—and two days later on the ulnar side. The vesicles were close to the edge of the scar, and there was not much pain with them.

Recently, the whole region of lost and lessened feeling has become hyperæsthetic or perhaps more properly hyperalgesic, just as happened in the case of Miss T., reported by Dr. Mitchell.

Jan. 20. The child was seen in consultation with Dr. Mitchell. At this time it was found, that, on every part of the region noted in the map—of Oct. 20, 1875—as insensible or dulled as to sensation, there was feeling either to the needle or to touch, and that all contact was felt as an unpleasant tingling, touch being felt as pain and touch. The touch beyond the regions marked in the plate as deficient was absolutely normal to the asthesiometer.

The three cases above related, two of which I owe to the kindness of Dr. Hodge, seem to me full of value to the surgeon and the physiologist. They all show the slughtness of our knowledge as to surface nerve anatomy, and indicate how curiously it may vary. Then, too, they prove how difficult it is, especially in young people, to prevent reunion of cut nerves, and how perfect may be that repair.

Two of them seem to me to make it almost sure that by some other paths than restored nerve-tubes sensation may be vastly improved in the territory we have sought to isolate, because it gains distinctness in cases where no muscular function returns, and where, therefore, repair could hardly have taken place.

These cases add, also, a new clinical feature in the fact that the return of sensation through other than direct channels is accompanied by a hyperalgesic condition.

Lastly, in cases of renewed sensory function after nerve-section, the various forms of sensation do not all alike recover, but sometimes the sense of pain and touch, being nearly normal, that of temperature remains imperfect, not merely in degree, but, so to speak, in kind; as also does touch in certain cases where it is felt as that, and also as pain. These facts seem to me altogether inconsistent with the popular medical view which holds to the idea of multiple nerve-fibres for all the forms of sensory impressions.

The excised portions of nerve, in all three of the above cases, were examined by Dr. Bertolet, whose reports we subjoin :—

The excised portion of the musculo-spiral nerve, Dr. Mitchell's Case I., was frozen shortly after its removal, and fresh sections obtained; some of these were coloured in a solution of terchloride of gold, others in perosmic acid. Subsequently the specimen was placed in a hardening solution, and very satisfactory cuts were also secured by this process.

The microscopic examination shows the central enlargement to consist

¹ On the 26th of January the ulcer had entirely healed.

almost entirely of double contoured nerve fibres, which interlace and cross one another in every possible direction, as represented in Fig. 9. The primitive nerve fibres lying in the central end do not appear to be arranged in regular nerve bundles, but are more or less widely separated by the de-

Fig. 9.

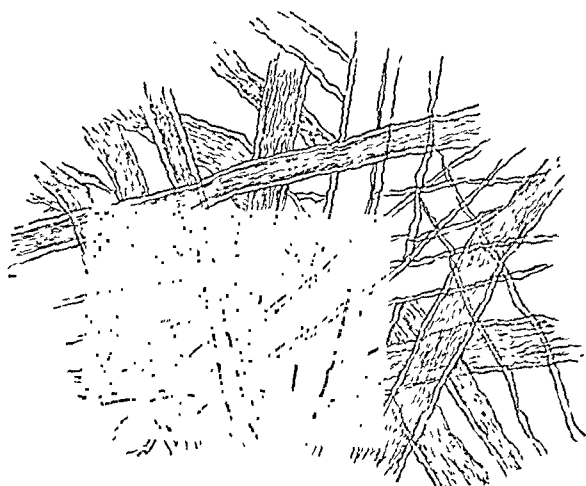


Fig. 9. Longitudinal section of proximal neuromatous swelling. Miss T.'s musculo-spiral nerve — Hartnack, Oc. 3, Ob. 7.

velopment of connective tissue. Towards the outer margins of the growth this increase of fibrous connective tissue becomes more decided, and even the perineurium seems to be slightly hypertrophied. This central nodule may, therefore, be said to consist of numerous nerve fibres and moderately increased connective tissue; the former, differing in no wise from those of an ordinary healthy nerve trunk, except in their irregular interlacing arrangement, present each a sharply-defined axis cylinder surrounded by the white substance and sheath of Schwann (neurilemma). At not a few points the nuclei of the nerve sheaths are more numerous than usual.

The button-like swelling upon the peripheral end, as will be seen in Fig. 1, p. 323, is smaller than that upon the proximal end, yet it presents essentially the same histological features. In it the primitive nerve fibres are oftener arranged in parallel rows, so that it is possible to follow an individual primitive nerve fibre for a considerable distance up into the regenerated portion of the nerve trunk.

Horizontal and vertical sections of the intermediate portion of the nerve between the neuromatous swellings are indistinguishable from those obtained from a perfectly normal nerve; thus showing how complete has been the regeneration of the excised part. Even a multiplicity of the neurilemma nuclei is extremely doubtful, although precisely the same methods of staining with carmine, etc., as had been resorted to in the other cuts, were employed to clearly develop them. The primitive nerve fibres throughout the entire length of the intermediate portion pursue a parallel course and are arranged in nerve bundles and fasciculi.

The cicatricial neuromas in this specimen do not differ from those which are formed after the decision or excision of a large nerve trunk from the lower animals. The central swelling, in accordance with the invariable rule, is also here the larger. Similar growths often occur upon the nerve

stump after amputation, but frequently the proliferation of connective tissue so far predominates in them, that they can no longer be designated as true neuromas. In Miss T.'s nerve, however, the tumours are so largely made up of newly-formed nerve fibres as to fully warrant such a classification. Unfortunately in this and the following cases of Dr. Hodge too long a period has elapsed since the primary operation, and too few traces remain to permit any positive conclusions as to the precise mode in which the regeneration has taken place. Still the evident increase by segmentation in the nuclei of the neurilemma, traces of which are yet noticeable in both the central and peripheral ends, leaves little room for doubt but that also in the human subject these nuclei are the principal factors in the reproduction of divided nerves. Although the reunion of nerves seems to take place under the most adverse circumstances, and though our methods of studying nerve structures have been so greatly improved, yet the comparative infrequency of the operation of excision, and the utter impossibility of watching the various phases of the reparative process, will, no doubt, compel us for a much longer time to resort to comparative experiments upon animals. Further, there is every reason for believing that the natural regenerative processes in man and certain animals are identical throughout. Numerous as the observations and experiments upon this point are, there is, nevertheless, such a bewildering conflict of authority as to render fresh investigations desirable.

With a view to ascertain the correctness of some of the statements made, I have divided in several kittens the ischiatic nerve, ligated it in others, and in one excised nearly half an inch of this nerve. Without entering into any minuter details of these experiments, I will here only briefly mention the histological changes which I observed in the divided nerves. The results are merely confirmatory of what has already been noted by others. The power of nerve regeneration is dependent upon the health, age of the individual, etc., being much greater in the young. Those interested will find young cats, on account of the limited amount of connective tissue in their nerve trunks, very well adapted for the study of the degenerative and regenerative processes taking place in divided nerves.

In a few hours already after the division of the nerve, both the nerve stumps become more or less swollen, grayish-red or yellowish in colour, and slightly transparent in appearance. The causes of these manifestations are seen in the engorgement and thrombosis of the divided or injured vessels of the nerve trunk, and in the saturation of the primitive fibres with transuded serum. Coagulation of the myeline speedily follows. It becomes cloudy and breaks up into concentrically laminated fragments, fat globules, and granular masses of detritus. These degenerated lumps of myeline escape in considerable quantity from the retracting nerve sheaths, and accumulate around the stumps. The primitive sheaths are often distended at points to twice their normal diameter, while at the same or later period the axis-cylinder appears swollen and soon begins to disappear entirely, so that in the advanced stages of the degenerative processes even the gold solution fails to render it visible.

These changes attain their maximum intensity in the immediate vicinity of the trauma, and extend but a very short distance along the central end, while it is correctly stated by Benecke¹ and Hertz² to extend uni-

¹ Ueber die Histologischen Vorgänge in durchschnittenen Nerven. Virch. Archiv, Bd. 55, S. 496.

² Ueber Degeneration und Regeneration durchschnittener Nerven. Virch. Archiv, Bd. 46, S. 257.

formly throughout the peripheral end of the nerve to its ultimate branches.

The first traces of the regeneration begin to show themselves a few days after the ligation or division of the nerve, while the degenerative changes mentioned above are still in progress. The commencement of the regenerative changes, although much disputed, must certainly be ascribed to the active proliferation of the nuclei of the neurilemma. They multiply by segmentation, are arranged in rows, and surrounded by a layer of protoplasm, have roundish, oval, and even spindle forms. This proliferation is seen in the central swelling and throughout (Benecke) the peripheral end of the nerve. The increased nuclei elongate into long spindles, while, at the same time, the medullary substance disappears, probably serving as

Fig. 10.

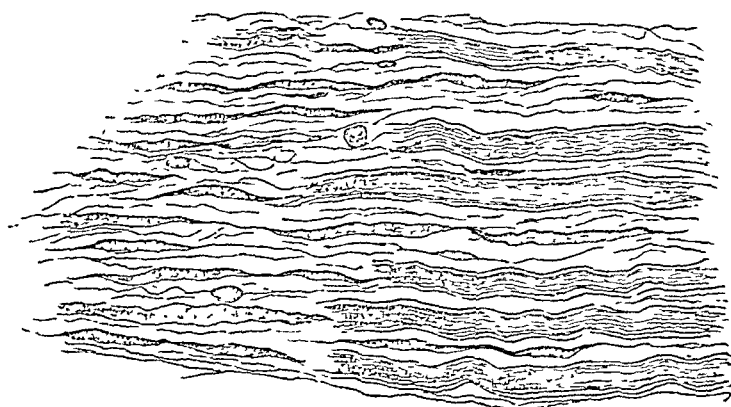


Fig. 10 represents a section at the point of union of the intermediate portion with the central end. It was removed from a cat six weeks after the excision. Many of the spindle cells, it will be seen, have already, in this short period, coalesced into long single contoured bundles.—Hartnack, Oc. 3, Ob. 7.

pabulum for the cells. Gradually as the regeneration progresses these spindle-shaped nuclei, in both the ends and cicatrix, send out long filamentous protoplasmic processes, which unite with one another and widen into narrow bands. These single contoured fibres are next surrounded by a second, sharply-defined, glittering contour. As the reparative process approaches completion these short cylinders gradually blend into one continuous medullary sheath. During these final changes a greater portion of the proliferated nuclei disappears, and very few remain as the permanent nuclei of the neurilemma. The nerve sheath being next filled out at all points with medullary substance around the axis-cylinder, present a uniform width throughout, and the regenerative process is now completed.

The reunion of the separated nerve ends in cases of excision does not take place by the primitive fibres of the central and peripheral ends simply growing towards each other, as claimed by Schiff,¹ Waller,² Neumann,³ and others, but is brought about by the coalescence of spindle cells arranged in rows in the intermediate cicatricial portion, which, at the same time,

¹ Zeitschr. f. urss. Zool., Bd. vii., S. 338.

² Nouvelles Observations sur la Régénération des Nerfs. Comp. Rend., t. 34.

³ Arch. de Heilkunde, 1868, S. 193.

unite with the primitive fibres of both ends. Virchow,¹ Hjelt,² Benecke,³ Hertz,⁴ and many others admit the latter mode of development of the new nerve fibres in the cicatrix; a process analogous to the embryonal formation of nerves, which can be so readily observed in the caudal appendages of the triton and tadpole.

Hertz has lately concluded that the migratory white blood corpuscles are the source of most of the spindle cells and newly-formed nerve fibres. It is not made evident how the blood corpuscles enter the nerve sheath, nor is such a theory needed in the presence of the unmistakable proliferation of the neurilemma nuclei.

Interesting as are many of the other views advanced in connection with the regeneration of divided nerves, I shall not attempt to enumerate them here. Those that have been advanced are such as the experimental observations have fully confirmed.

Through the kindness of Dr. Hodge I have recently had the opportunity of studying the two cases of nerve regeneration in the human subject appended to Dr. Mitchell's case. The results obtained are so nearly those of the preceding example that I shall not here detail the histological appearances; they are essentially identical.

ART. II.—*Ligations of Large Arteries at the Pennsylvania Hospital between the years 1868 and 1876, with a table of all the Large Arteries which have been Tied in that Institution, including the completed history of a Case of Ligation of the Left Internal Iliac Artery, with Remarks, etc.* By THOMAS G. MORTON, M.D., one of the Attending Surgeons to the Hospital, etc.

In the Pennsylvania Hospital Reports for 1868, I published a review of all the ligations of large arteries occurring in this Institution between the years 1835 and 1868; during which period only seventeen such operations were performed; the subclavian had been tied once, the common carotid five times, the common iliac once, the internal iliac once, the external iliac three times, and the femoral artery on six occasions. Of these ligations, three of the carotid and one of the external iliac proved fatal.

Since 1868, among the cases where occlusion of vessels by the ligature was resorted to, twelve only are recorded in which arteries of magnitude were involved; these were principally in the treatment of hemorrhage, aneurisms, and elephantiasis Arabum. Four of the ligations were upon the common carotid, in three of which the patients perished; the subclavian was tied once, with a fatal issue; the axillary and brachial arteries were

¹ Die krankhafter Geschwulste, Bd. iii., S. 247.

² Ueber die Regeneration der Nerven. Virch. Archiv, Bd. xix., S. 352.

³ Virchow's Arch., Bd. 55, S. 496.

⁴ Virchow's Arch., vi., S. 257.

each successfully tied; and of five femoral ligations, one died. With two exceptions, in all of the foregoing operations the ordinary silk waxed thread was used; in the two instances referred to, one a brachial and the other a femoral ligation, carbolized catgut was substituted, while in the former the operation proved successful, in the latter, febrile symptoms occurred on the second day, phlebitis followed with a temperature on the eighth of 103° , and the patient died on the seventeenth day after the operation; subsequent examination discovered the artery firmly closed, but the femoral vein was full of pus. In the case of subclavian ligation, the cord was thrown around the artery when the patient was in an exceedingly exhausted state, having suffered not only from a severe railroad crush, but also from several hemorrhages; the ligation at least saved the patient from dying immediately from this latter cause.

In the death after carotid ligation (Case IV.), the subject was of the hemorrhagic diathesis; the tying of the artery and transfusion prolonged the life of the patient for more than two weeks; sloughing of the internal jugular vein being the proximate cause of death.

Case IX. was a slight gunshot wound of the thigh involving the femoral artery, in which, on the twelfth day after the receipt of the injury, it was found necessary to tie the vessel on account of severe hemorrhage, a most unfavourable period for any surgical procedure.

In Case XI., where the presence of an intracranial aneurism was suspected, the carotid was tied, with a fatal result due to cerebral anæmia. The last case was one where the carotid was ligatured in a case of pulsating orbital tumour; death followed from serous apoplexy.

Intense pain, which occasionally has been observed in a limb after ligation of a main vessel, has not been noticed in any of the cases here reported.

Operations upon the arteries have been of rather unusual occurrence in the Pennsylvania Hospital, for, previous to 1835, it does not appear from the Hospital records that any large vessel was tied; and since then, a period of forty years, there has been only twenty-nine ligations in all, showing in a striking manner the rarity of these operations in this institution. I have given the histories of the last twelve operations, somewhat in detail, with a condensed table of the operations performed up to the present time. I have also appended the histories of two cases already partially recorded elsewhere. The first was a ligation of the left internal iliac artery for a supposed uncomplicated gluteal aneurism, the previous report terminating when the patient left the hospital; the second was one of "aneurism by anastomosis" of the orbit, where hemorrhage had occurred from a blow; in this case I enucleated the entire contents of the orbit and attacked the hemorrhage with the actual cautery followed up by pressure, with an excellent result and speedy recovery.

CASE I. Pistol-shot Wound of the Neck, involving the External Carotid Artery, or one of its Branches; Ligation of the Common Carotid; Recovery.—Anne S., aged 28 years, was brought into my wards Sept. 4, 1868, with a pistol wound; the ball entered the right side of the neck, posterior to and below the angle of the jaw, and between it and the mastoid process.

Being absent from the city, my colleague, Dr. Wm. Hunt was called. Large quantities of blood were repeatedly vomited, showing continued internal hemorrhage; as the patient was evidently sinking from loss of blood, Dr. Hunt tied the common carotid in the apex of the superior carotid triangle. The patient at once improved, and had a speedy convalescence; on the 28th day the ligature separated, and she was discharged, quite well, on the twelfth day of October.

CASE II. Railroad Crush of the Arm with Secondary Hemorrhage; Ligation of the Subclavian Artery; Death.—W. D., aged 37, was admitted Sept. 21st, 1868, with a complete crush of his right arm, involving all the tissues close to the shoulder-joint, the limb being held simply by fragments of lacerated integument. The axillary artery, which lay exposed in the wound, was tied. Suppuration about the joint-muscles developed and the wound soon presented an unhealthy appearance. On the 7th day an attack of alarming hemorrhage, controlled only by pressure, reduced the patient almost to a dying condition. In consultation with Dr. Hunt, we decided that, should bleeding again occur, the subclavian should be tied, although not expecting much from the treatment, as the exhaustion was extreme. Another hemorrhage came on during the afternoon, and although about two ounces only of blood were lost, it was almost sufficient, in the existing condition of the patient, to produce a fatal result; at 4 P. M. I tied the subclavian, but reaction did not occur, and the patient died the same evening.

The autopsy revealed dissecting abscesses about the shoulder-joint, and a small clot was found above the place of ligation. The axillary artery was found gaping open in the midst of a sloughing mass, the vessel being reddened and softened for three inches above its ragged, ulcerated mouth.

CASE III. Popliteal Aneurism; Ligation of the Femoral Artery; Recovery.—P. C., a labourer, aged 25, was admitted with an aneurism of the ham, on the 31st of May, 1869. The femoral artery was tied by Dr. Hewson a few days afterwards; the man was discharged cured July 28th, 1869.

CASE IV. Lacerated Wound of the Face and Upper Jaw; Hemorrhagic Diathesis; Persistent Bleeding; Ligation of the Common Carotid Artery; Mediate Transfusion; Death from Rupture of the Internal Jugular Vein.—W. P., aged 27 years, of a highly hemorrhagic diathesis, was admitted October 15th, 1869, on account of a continued severe bleeding from a wound of the upper lip and jaw, caused by falling upon a piece of broken china a few days before.

Hemorrhage after hemorrhage had taken place, producing excessive exhaustion and nervous prostration, the bleeding coming not only from the original wound, but also from the pin punctures of the interrupted suture with which the edges had been approximated. Acupressure of both facial arteries proved insufficient to control the flow of blood, and ligation of the carotid artery was resorted to at 7 P. M. A few days later, October 20, he entered a comatose state from exhaustion, without, however, having lost much blood since the operation. Mediate transfusion

was then effected; eleven ounces of defibrinated blood were thrown into the forearm, with such good effect that in two hours the patient was semiconscious, and on the next day was very much better, no further hemorrhage having occurred. The patient continued to improve until November 3, when suddenly, without premonitory symptoms, the internal jugular vein gave way, and death ensued two days later; the operation of transfusion having prolonged the patient's existence for more than two weeks.

CASE V. Incised Wound of the Arm completely dividing the Brachial Artery, Basilic Vein, and Median Nerve; Ligation of Axillary Artery; Recovery.—Catharine B——, aged 66, and of intemperate habits, was admitted November 8, 1868, with a severe incised wound in the region of the upper third of the left arm, in which the artery, vein, and median nerve were severed. Four hours after the accident I saw the patient; the wound was then open, the main vessel was traced up to the axillary junction; shortly above this point a ligature was thrown around the trunk, and the lower end of the divided artery was tied as well; the vein was also secured at the place of the injury. The ligature separated on the eighth day, and the patient was discharged, perfectly well, Nov. 28.

CASE VI. Severe Lacerated Wound of the Hand, Secondary Hemorrhage; Ligation of the Brachial Artery; Recovery.—I. H., aged 26, was admitted Nov. 29, 1872, with deep incised wounds of the left hand, produced by the explosion of a mineral-water bottle which he was filling. Serious hemorrhage occurred Dec. 11, and, as it was impossible to tie in the wound, the brachial artery was tied in the upper portion of its course, by Dr. Levis. The patient was discharged cured, Dec. 31, 1872.

CASE VII. Elephantiasis Arabum of the Right Lower Extremity; Ligation of the Femoral Artery; Recovery.—J. P. T., coloured, aged 30, was admitted December 1, 1873. The patient, a farm-labourer, had been a slave in Virginia, where he was born and always resided until after the outbreak of the war, when he came to this city. His father was a cripple from a fall, but was otherwise in good health; his mother was also healthy. He and a younger brother were the only ones out of fifteen children who suffered from enlargement of the limbs. He had never been in Barbadoes. Fourteen years before coming into the hospital, he noticed the first symptoms of increasing size of the right leg. At first he had some pain, especially at night, but of late years he had been able to work as well as any one, and felt only inconvenience from the weight of the limb and from a serous oozing that issued from some abrasions and kept his foot cold and wet. His general health was excellent, the disease being mainly confined to the right inferior extremity, which was markedly ichthyotic from the middle of the thigh down to the instep; the skin and hypodermic cellular tissue was very much hypertrophied and hung in large folds over the ankle-joint. Under some portions of the thick, scaly epidermis there were effusions of pus. The left leg above the ankle was slightly enlarged, but the surface seemed natural. The skin of the abdomen showed impairment of nutrition and alteration of structure, which he said was the result of a scald when he was small.

December 12. I tied the femoral artery at the usual place. The temperature of the limb taken on the eighth day after the operation was 98° between the toes, and 101½° on the surface of the calf, the thermometer remaining on one hour; the axillary temperature was 99°. The limb was enveloped in a poultice of flaxseed in order to remove the old epidermis.

The ligature came away on the twenty-first day, and the small wound remaining speedily closed. The limb was now enveloped in a roller bandage firmly applied, exchanged on the 7th of January, for one of India-rubber, which was, however, removed at the end of four hours on account of producing numbness. The compression was resumed as a regular portion of the treatment, and the limb gradually and steadily decreased in size; the patient was discharged as improved March 21. There was a marked improvement after the separation of the ligature, but as there was all along firm compression with the limb in the horizontal position, it was difficult to know how much was due to the operation. The patient was subsequently admitted into the Philadelphia Hospital under the care of Dr. Brinton, who kindly sent the case to me for an examination.

I found the limb nearly as large as it was prior to the ligation; the patient, however, considered himself as much improved, and thought that the operation had arrested the growth of the disease.

CASE VIII. Popliteal Aneurism; Ligation of the Femoral Artery; Recovery.—P. C., aged 30, unmarried, was admitted May 12, 1873. Six weeks before admission, while lowering a load of flour barrels, he slipped and sprained his left knee, immediately experiencing considerable pain. Two weeks afterward he noticed a small, painful, pulsating tumour under the knee. The leg was painful and swollen, especially about the knee, which measured $15\frac{1}{2}$ inches in circumference, the sound limb being only 13 inches; two days later, on repeating the measurement, an increase of the affected side was observed.

Tincture of veratrum viride was given in ten-drop doses, three times a day, and digital compression of the main artery was instituted at 12.30 P. M., and continued until 8 P. M., when a tourniquet was applied, and allowed to remain on all night. The next morning pulsation was as strong as before; compression was then discontinued, and a poultice applied to the spot that was slightly contused by the pressure.

May 17. The femoral artery was tied.

18th. Pulse 112; all pain in the popliteal region had vanished.

19th. Pulse 132; temperature 102° . A slight redness observed about the line of the operation.

On the 27th the ligature separated, and the patient was discharged, quite well, on the 2d of June.

CASE IX. Traumatic Aneurism following a Gunshot Wound of the Thigh; Ligation of the Femoral Artery; Death.—T. M., aged 40, was admitted May 28, 1874. In attempting to withdraw a loaded pistol from his pocket it exploded, and the ball entered the thigh about one inch to the inner side of the line of the femoral artery near the middle of Scarpa's triangle. He was in a profound state of shock from loss of blood when he was brought to the hospital, although by that time the hemorrhage had ceased. Immediately under the wound, which was quite small, a pulsating tumour was found in which a thrill was detected; and no pulsation could be felt in either the anterior or posterior tibial arteries. On June the 5th, there was considerable oozing of sanious pus; the pulsation was still very well marked in the swelling. Three days later, while the wound was discharging freely, secondary hemorrhage occurred. The bleeding was checked, after about ten ounces of blood were lost, by the application of the tourniquet, and flexion of the knee.

June 10. Dr. Hewson enlarged the wound, and tied the femoral artery. It was discovered that the ball had torn away the inner side of the vessel

for about an inch in extent; above and below this point the artery was quite friable.

17th. During the preceding three days the patient had been delirious. The foot and the inner side of the thigh were gangrenous.

26th. A secondary hemorrhage occurred, requiring the introduction of an acupressure needle under the artery; the patient's pulse was 160, and his condition poor; he expired on the morning of the 28th of June.

CASE X. *Popliteal Aneurism; Ligation of the Femoral Artery; Death.*—W. P. G., aged 48, a tailor by occupation, strained himself, in April, 1874, by lifting a heavy weight; and soon afterwards noticed a tumour under his left knee, which gradually increased in size, and was, from the first, painful. On his admission, October 15, 1874, the aneurismal tumour filled the popliteal space; the leg was much swollen, and its surface cedematous.

On the 21st of October the femoral was tied by Dr. Levis, using carbolized catgut ligature, cutting off the ends close to the vessel; the wound was then completely closed by numerous wire sutures.

There were some febrile symptoms on the morning of the 23d, the pulse being 112, and the temperature $101\frac{1}{2}^{\circ}$. Three days later the skin was dry and hot, the thermometer indicating 102° .

Nov. 2. Ichorous pus was noticed exuding from the wound. Considerable tenderness existed along the line of the great vessels, and the swelling and œdema of the limb had markedly increased. The patient's urine precipitated phosphates in abundance on standing, and contained about one-tenth of its bulk of albumen. From this time the patient gradually declined; he fell into a condition of wandering delirium from exhaustion and fever, with a temperature, generally, of 104° . The failure was gradual until November 8, when he died, after having been quite unconscious for twenty-four hours.

Post-mortem.—A collection of dark fetid pus was found surrounding the occluded vessel. The ligature was found in position, with the knot still adherent, but so slightly held that it readily came away. The closure of the artery was complete, the calibre being impervious for three inches above and five inches below the point of ligation. The superior profunda artery was found to be of larger size than the femoral itself. The main vein, on being opened, was seen to be filled with a mass of broken-down lymph, and its walls were thick and roughened from inflammatory deposit.

CASE XI. *Supposed Intra-cranial Aneurism; Ligation of the Common Carotid Artery; Death; Autopsy.*—Mary D., single, æt. 23, was admitted Oct. 13, 1874. The patient gave the following history: While walking along a country road on the 5th of October, 1874, she experienced a sudden, sharp, darting pain in her left temple, and thought that she had been stung by a bee. The pain soon recurred even more severe in character, and on reaching home it was constant and agonizing. Towards evening she had sick stomach, and, for the first time, noticed a peculiar whizzing noise in the left side of her forehead and temple, which, as she imitated the sound with her lips, resembled closely the puffing of a locomotive. A marked swelling and protrusion of the tissues occupying the left orbit became evident, and on the following morning the globe of the left eye was so prominent that the lids could not be closed over it; vision of that eye became very much impaired, although previously it had been perfect; and on the next day, forty-eight hours after the first seizure of pain, the

eye became stone-blind. During the next five or six days the suffering gradually lessened until the time she was brought to the hospital, when, apart from a dull heavy ache, she did not have much pain; exhaustion being a prominent symptom.

The patient, who lived out at service, was a rather delicately framed, anemic, waxy-faced girl; she had previously always enjoyed a fair measure of health, although unquestionably phthisically predisposed, four sisters and one brother having perished with consumption, and her mother having recently died of the same disease.

The right eye was normal except that under the conjunctiva at the inner angle there was a slight effusion of blood. On the left side there was extreme exophthalmos, the globe was congested, the pupil markedly dilated, and the eye was motionless and stone-blind. There was complete paralysis also of the third, fourth, and sixth nerves, with partial palsy of the ophthalmic branch of the fifth, and great œdema of the upper eyelid. An ophthalmoscopic examination was made with difficulty, the media being cloudy, but the disc was seen to be regular, and the retinal veins and arteries blocked. A loud aneurismal bruit was audible on the left side of the head, particularly in the temporal region and directly through the eyeball, in which, however, there was no pulsation perceptible. Pressure upon the corresponding carotid entirely controlled the bruit, which was intermittent and synchronous with the cardiac systole.

Large doses of stimulants and anodynes were freely administered, and, on the morning after admission, in order to test the presence of a deep orbital abscess or tumour behind the globe, I made an incision through the conjunctiva, and, introducing my finger, explored carefully the cavity of the orbit, which was found to be normal. No hemorrhage followed the operation, which was, indeed, bloodless.

The sudden nature of the attack, the intense pain, protrusion of the eye, the total paralysis of the 2d, 3d, 4th, and 6th nerves on the left side, the pronounced aneurismal thrill most distinct in the temporal region and controllable by pressure, the absence of any orbital disease—led not only myself and colleagues of the medical and surgical staff, but also all who examined the case, to concur in the diagnosis of aneurism of the internal carotid, or of the ophthalmic artery just as this vessel leaves the carotid, within the cranium. The nerve palsy was fully accounted for by the pressure incident to a rapidly forming aneurismal tumour upon either of the arteries just back of the sphenoidal fissure; digital examination had demonstrated the absence of any orbital disease, and as no kind of intra-cranial tumour could grow as rapidly and produce as much mischief in so short a time as aneurism, this diagnosis was thought to be beyond a doubt. The protrusion of the globe of the eye was passive, and incident to serous effusion within the orbit, and venous turgescence. Pressure on the carotid quite controlled the bruit, and furnished additional evidence in support of the aneurismal theory. The absence of pulsation of the eye was believed to be due to the fact that the distal arteries, by the pressure of the aneurism, were totally occluded; while the nutrition of the orbital tissues was so seriously interfered with that sloughing had already commenced.

On the 16th of October a corneal slough was noticed, and the eyeball had the general appearance of disorganization. The whirr was well-marked, and was very distressing to the patient; her temperature at this time was 100°, and pulse 72, but there was a sensible improvement in her

physical condition. Comparison of the sounds of the heart and those of the cervical vessels and the tumour, showed that the right carotid gave both sounds normally; in the left carotid, in its upper portion, there was a faint murmur with the expansion of the artery, and a distinct second sound; the aneurismal bruit was very much less distinct down the artery than at the temple.

Three days afterwards (19th) she had a sudden seizure of abdominal pain, with sick stomach, and considerable distension of the abdomen with wind, which yielded to opiates, carminatives and local applications. After a number of consultations had during the progress of the case, it was finally decided to ligate; and, on Oct. 20th, I tied the left common carotid immediately above the omo-hyoid. The bruit ceased at once, and the exophthalmos speedily subsided. In the afternoon of the following day, during an attack of sick stomach similar to that of a few days previous, the patient suddenly became very pale and expired.

Post-mortem.—Having been absent from the city on the day of the patient's death, and not returning until the next evening, I then learned that the body had been removed from the hospital immediately after death, and that a partial examination had been made, in which the skull was opened, but no aneurismal tumour being discovered where it was expected, the search terminated. I made the examination under some difficulties, for the friends would not allow the body or any part of it to be removed from the box in which it had been placed.

The anterior portion of left hemisphere was very much softened at its under surface, with marked evidences of recent inflammatory disease. All the nerves and bloodvessels which entered the sphenoidal fissure were firmly glued together with recent lymph, and all the tissues were completely and strongly contracted, especially at the entrance of the left orbital cavity; thus the nerve-trunks and bloodvessels were so inextricably involved and matted together in a mass, that it was found impossible to trace out individual structures, *but there was no trace of any aneurismal disease.* The main venous trunks in the locality, the ophthalmic, cavernous, and circular sinuses were greatly distended with firmly clotted blood; and all around on the left side, masses of fresh plastic deposit were noticed. The left internal carotid was normal. On the right side the venous sinuses were free from clots and apparently in a normal condition, but the internal carotid of this side showed, at the place where this vessel gives off the middle and anterior cerebral vessels, a slight enlargement, which was not of sufficient size to interfere with the blood-current in the circular venous sinus; when the artery was opened the internal coat showed no alteration from the normal artery. The brain was exceedingly pale, and its venous trunks generally engorged.

Remarks.—The absence of any aneurismal affection of the left internal carotid or ophthalmic artery was a matter of profound surprise, all the signs pointed to such a pathological condition. In Mr. Bowman's well known case,¹ the aneurismal bruit was similarly well marked, and was associated with just as strongly corroborative symptoms of aneurism either of the internal carotid artery or its ophthalmic branch; the autopsy also demonstrated the absence of aneurism. In the case referred to, the

¹ Roy. Lond. Oph. Hosp. Reports, 1859.

pathological appearances "were those of phlebitis of the cavernous, transverse, circular, and petrosal sinuses," and it was believed that in this case the arteries were compressed "by the swollen walls of the cavernous sinus against the side of the body of the sphenoid bone, giving rise to the bruit." In this case there was pulsation of the eye on the affected side, which was not the case in the one I have reported, for complete strangulation, the result of inflammation at the sphenoidal fissure, cut off all arterial supply and produced the symptoms that were believed to be incident to the pressure of a suddenly formed aneurism.

If the conclusions of Mr. Hulke, who reported Mr. Bowman's case, are correct, we have a ready solution for the symptoms in the case which I have detailed; the blood sent up on the right side found a ready distribution, while on the left side it passed into vessels whose dilatability was seriously interfered with, all the venous sinuses being enormously distended and rigid with clotted blood. Thus the arteries were more or less compressed against bony walls, and the bruit was probably the result of this circumstance. The phlebitis and local inflammation about the sphenoidal foramen so tightly glued together and constricted the tissues involved as to not only prevent the blood from flowing in the arteries and veins of the part, thus shutting off the supply from the globe and leading to its disorganization, but also to totally paralyze the second, third, fourth, and sixth nerves.

The slight dilatation of the right internal carotid was, perhaps, not abnormal; at the most it could have exerted but a trifling influence in the way of obstructing the venous circulation. I do not, therefore, look upon this variation at all as the cause of the diseased condition on the left side, which was purely that of phlebitis, with lymph exudation.

With our present knowledge of these cases, it will be conceded, I think, that a very great difficulty exists in effecting a diagnosis in cases having symptoms of intra-cranial aneurismal disease; and in the future, should such a case occur, a delay in operative treatment would, perhaps, be the safer course. Yet the difficulty meets us here that in waiting for further symptoms to develop we may lose, by not tying the carotid, the only chance for the patient's recovery. In the case under consideration, had the operation been delayed, the cerebral symptoms would doubtless have continued, the softening, seen *post-mortem*, would likely have developed abscess, and death, with the diagnosis still undecided; then, had no autopsy been allowed, the delay would have been condemned; and even with such an examination, in a brief period of time all evidences of a small aneurism might readily be destroyed in the pathological changes incident to softening, abscess, and hemorrhagic effusion.

The well-recognized bruit of true aneurism, it will be remembered, was present in the case which I have just reported, as well as in that recorded by Mr. Hulke. Both of these instances demonstrate the fact that we may have, from an interference in intra-cranial arterial supply, a systolic bruit

with distinct intermissions, similar to that occurring in a true aneurism, induced by compression of arterial vessels by swollen and occluded venous sinuses.

CASE XII. Large Pulsating Tumour of the Left Orbit and Temporal Region; the Frontal and Temporal Arteries and the Tumour Acupressed; Ligation of the Common Carotid Artery; Death.—E. F. B., æt. 43, a jeweller, of very intemperate habits, was admitted on the 16th of December, 1875, on account of hemorrhage from vessels leading to a pulsating tumour of the left orbit, whose origin dated back 29 years, when he had been struck violently with a snowball in this location. Following the blow there was considerable ecchymosis, swelling, and some inflammation, that on subsiding left a dull red-coloured sac, which afterward slowly enlarged and involved the neighbouring structures. During the last five or six years the tumour had given him considerable annoyance and uneasiness, on account of its increasing size and the presence of a peculiar throbbing. Its surface of late had been quite moist, so that he was obliged to use his handkerchief frequently to wipe away the beads of perspiration. On a former occasion he sought admission to the hospital, but at that time an operation was deemed inadvisable. Since that period, two years ago, the tumour had grown so rapidly as to disfigure him; and the day before admission it bled so profusely that before he could get assistance he had lost a large quantity of blood. The inner portion of the left orbit was occupied by a pulsating tumour about the size of a pullet's egg, immediately above this main portion a smaller growth existed which also pulsated; it was from the latter part that the hemorrhage occurred. A pad of lint saturated with Monsel's solution had been placed on the brow before coming to the hospital; as it appeared effective, it was thought unnecessary to remove this dressing.

Pressure on the carotid artery of the same side controlled the pulsation. His heart was irritable and somewhat irregular; the first sound was weak. On the 19th he had another bleeding; this, however, was promptly treated and ceased under pressure; but on the 28th he again had a hemorrhage. The patient, on the 5th of January, was much improved, although he continued to lose blood at intervals of a day or two, which was always promptly met with pressure. His general condition was now so encouraging that it was decided to operate upon the tumour, and, if found necessary, to ligate the carotid artery.

January 8. The patient was etherized, and acupressure needles were introduced under the frontal and temporal arteries, which were then constricted by ligatures. As this was insufficient to control the pulsation, the common carotid artery was then exposed and tied just above the omo-hyoid muscle. The artery was found to be very large, and the other vessels of the neck were likewise distended. The tumour itself was then treated by two acupressure needles and ligatures.

Recovering from the ether, a quarter of a grain of morphia was administered, by the aid of which he passed a comfortable afternoon. At 11.30 P. M. his breathing became laboured, his skin quite hot, and the pupils markedly contracted; the pulse was 120, respirations 12, and the temperature 103° , soon after rising to $104\frac{1}{2}^{\circ}$, and the breathing became still slower. Nineteen ounces of blood were now taken from his arm, with the most salutary effect; the patient revived sufficiently to converse, the pupil

became more dilated, and his breathing gradually grew better and fuller; but at half-past two he rapidly became worse, the stomach-rejected stimulants, his pulse grew progressively weaker, and he fell into a stupor, and died of serous apoplexy the same morning.

Autopsy.—The dura mater was tightly adherent to the bone and markedly congested. The arachnoid was opaque in places, and generally clouded; beneath it was a very large collection of clear serum. The sinuses were full of blood, but contained no clots; the vessels of the brain were normal; the enlargement, and anastomotic condition of the vessels, were principally at the front and inner part of the orbit.

In connection with these cases of orbital disease, it may be interesting to report the result of an uncomplicated case of aneurism by anastomosis which followed a blow upon the brow where "orbital tumour, exophthalmos, pulsation, and bruit" were prominent symptoms. The condition of the patient in July, 1870, was as follows:—

"Exophthalmos¹ strongly marked; a soft, compressible tumour existed above the eye, extending backwards. With some effort the globe could be restored partly within the orbit, the tumour diminishing, and when pressure was removed, slowly regaining its former size. There was a feeble bruit, and a slight pulsation, which was entirely controlled by pressure on the corresponding carotid. The left eye was projected forward and downward to the extent of one inch from its normal position, the globe was horizontally flattened; the upper border of the iris was on a level with the lower edge of the right, the pupil was active, and the external ciliary vessels were engorged."

In March, 1870, in referring to the treatment, I stated that "a partial removal of the tumour with the knife and ligation of its deeper portion would probably be sufficient." On the 31st of May, of the succeeding year, I was suddenly called to see this patient, who had just received another blow on the eye. His previous condition was aggravated by this injury, which caused a rupture of small vessels, with effusion into the orbit, leading to excessive exophthalmos, and intense pain from the distension; an abscess was developing in the outer chamber of the eye, and the organ was stone-blind. There was pulsation, bruit, and a whirr. I then made an incision across the brow, commencing at the outer canthus and extending rather beyond the mesial line; the flap thus made was turned down, the tumour was reached, and the entire contents of the orbital cavity were then rapidly enucleated. In completing the excision the bleeding became excessive, but was controlled by the actual cautery and pressure. The removal of the entire contents of the orbit in this case verified the correctness of the original diagnosis of "aneurism by anastomosis," for the tumour was found to be composed mainly of enlarged bloodvessels with connective and fibrous tissue.

The patient completely recovered, the orbit subsequently became filled by granulations and healed perfectly. Dr. J. G. Richardson examined the mass removed, and reported:—

"The tumour of the orbit is composed of loose connective and adipose tissue abounding in bloodvessels. It also contains some small masses consisting chiefly of fibrous tissue in bundles varying from 25¹66 to 1006

¹ Am. Journ. Med. Sci., July, 1870.

of an inch in diameter, crossing each other in every direction, and exhibiting, on the addition of acetic acid, numerous oval, elongated, and spindle-shaped nuclei, resembling those from connective-tissue corpuscles. Similar bundles of fibres exist to a considerable extent among the normal structure of the lachrymal gland, which has doubtless participated in the surrounding inflammation."

Subsequent History of a case of Ligation of the Left Internal Iliac Artery for Gluteal Aneurism.—A young man, 24 years of age, was admitted Sept. 28, 1867, with a strongly pulsating tumour of the left buttock. In July, of the same year, he had fallen and struck this hip, which had been previously in a somewhat swollen and painful condition from supposed inflammation. A rapid increase of size in the tumour was observed following the injury. The growth measured $5\frac{1}{2}$ inches transversely, and $6\frac{1}{2}$ inches in the vertical diameter. It was situated directly over the gluteal artery, it had a marked expansive pulsation, and a loud bruit was heard all over its surface; a careful rectal examination failed to detect any tumour in the abdominal cavity. The growth was rapidly increasing; its more troublesome symptoms being intense local pain and inability to walk.

The case was carefully examined by the surgical and medical staff of the hospital, Prof. Gross, and others; and the question of the tumour being other than aneurismal was fully discussed. Microscopic examination of a few drops of fluid from its interior, obtained with the aid of a grooved needle, elicited no evidence of carcinomatous disease.

Oct. 16th, two days after the examination referred to, in the presence of a number of medical men, I tied the internal iliac artery. On tightening the ligature pulsation at once and completely ceased in the tumour; no intra-pelvic disease was present. The ligature separated on the twenty-second day. The note of Dec. 29th states that the "wound has closed up firmly, the tumour has diminished in size, is quite soft, and may eventually suppurate."

The patient was discharged on Dec. 14th, fifty-nine days after the ligation; the tumour was very much reduced in bulk, but presented evidences of deep suppuration; it was entirely free from pulsation. Dr. W. H. Egle, of Harrisburg, wrote me, Dec. 23d, 1867, "the case now seems to be assuming a very serious aspect; there has been no perceptible change in the patient until yesterday, when I perceived that there was evidently a collection of pus forcing its way to the outer side of the cicatrix; the inflammation surrounding the hip is in nowise abating; there is slight œdema of the left foot."

In January, I visited the patient and found the hip much enlarged; there was no pulsation in the tumour, but an abdominal growth was evident upon deep palpation anteriorly, which, like that in the gluteal region, had a doughy, elastic feel, and the adjacent integument was tense and shining. I now had but little doubt that the disease was malignant in its nature. Under date of Feb. 3d, Dr. E. wrote: "The hip has been steadily increasing in its dimensions until five days ago, when there appeared to be a diminution. The abdomen, especially above the cicatrix, is much swollen, the buttock has a doughy feel, and there is less heat and tenderness. Evidently there is pressure either from a tumour or an abscess about the neck of the bladder and rectum; the former has to be emptied by catheter, while injections will hardly suffice to remove the feces." And again, Feb. 15th: "The pressure of the sac or tumour on the rectum has

been very great; the bowels have been fearfully impacted. On Wednesday, I inserted a trocar into the tumour on the hip, and drew off a tablespoonful of serum."

April 8, Dr. E. wrote that the patient had succumbed, and sent the following particulars of the autopsy:—

"On opening the abdominal cavity by an incision in the median line, the first thing that attracted my notice was the monopolizing of two-thirds of that space by a large tumour in the left iliac region, pushing the bowels and bladder far to the right side; my next incision laid open the tumour on a line parallel with the cicatrix, and I found that the substance of the growth was composed of callous tissue, from which a cherry-like substance exuded on section. The tumour was made up of cells filled with blood, in size ranging from that of a pea to some an inch in diameter. Cutting down upon the left internal iliac artery, I found no trace of any aneurismal tumour; the left ilium was almost wholly absorbed, the remaining portion being completely denuded of periosteum, and full of perforations. The entire acetabulum was gone, but with the exception of a little groove in the head of the femur, that bone was intact, being without periosteum, however, for one-third of its length. The head of the bone could be forced into the pelvic cavity."

The possibility of this rapidly growing tumour being cancerous in its character was fully discussed prior to the operation; the principal fact in favour of malignancy was the negative one that aneurismal disease in this locality is extremely rare. The bruit and pulsation of the tumour were well marked; the expansion of the swelling with each impulse of the heart, the great diminution of the gluteal enlargement under pressure—more than would be expected from an encephaloid growth, the normal condition of the abdominal cavity at that time, the general good health and absence of all hereditary taint, were evidences opposed to this view; while the examination of the fluid obtained by the aid of the exploring needle seemed to indicate the existence of a cavity such as might be expected in an aneurism.

At the time of the ligation, the abdominal cavity explored during the progress of the operation was perfectly healthy; while the tissues about the iliac artery, from its origin to its point of exit from the pelvis, were quite normal. The cessation of pulsation, the subsidence of the tumour, the relief from pain, and the recurrence and the final disappearance of the pulsation, also gave, seemingly, the unequivocal signs of aneurismal disease.

That the case was not one of simple aneurism is fully conceded; yet it is still possible that a false aneurism existed in this very vascular malignant growth. This, however, was not demonstrated at the post-mortem, as it apparently did not include an examination of the original tumour. The patient's life was probably prolonged by the operation, and a portion of the time he had entire immunity from pain, which had previously been such a very prominent and distressing symptom, and was steadily increasing. When the patient fell and struck the hip, some vessel or vessels feeding

this soft cancerous growth were probably ruptured ; the rapid increase at this time, the addition of excessive pain and pulsation, were evidences in favour of this view. Gross,¹ when on the subject of vessels in encephaloid tumours, declares that "their walls are unusually brittle, and they are, therefore, liable to give way under the most trifling causes, producing those apoplectic depots which are so often seen in their interior." A vessel being thus ruptured, its blood would be poured into the surrounding tissues, and at once a false aneurism might be established.

The symptoms in this case, of aneurism with increasing size of the tumour and excessive pain from pressure on the sciatic nerve, seemed to call for some active interference ; and, with no positive sign of any cancerous affection, the ligation of the artery was determined upon, and, as far as that was concerned, terminated favourably, the ligature separating on the twenty-second day. The growth subsequently increased very much in size, the ilium was involved and absorbed, and the disease, creeping into the abdomen through the perforated bone, developed a large tumour, which encroached upon the bladder and rectum, and the patient finally died from exhaustion.

Résumé.—First, the original disease was doubtless encephaloid, under the gluteal muscles.

Second, the fall ruptured an arterial branch or branches supplying the growth, developing within the tumour a circumscribed false aneurism having all the characteristic signs of aneurism, viz., bruit, expansive pulsation, etc., which, after the ligation of the principal source of blood-supply, the internal iliac, underwent the changes usually observed after securing the main vessel, viz., disappearance of pulsation, diminution in size, loss of bruit, with recurrence of the pulsation at the end of seven days from the establishment of the collateral circulation, then rapid solidification of the tumour and cessation of all pulsation, followed by evidences of softening and the actual accumulation of pus ; which, obtained by a trocar and examined under the microscope, showed degeneration of the contents.

Third, the tumour, developed less rapidly after the ligation, finally entered the abdomen through the ilium, which had become absorbed.

There have been a number of cases reported where the diagnosis of aneurismal disease was at fault. In the *Med.-Chir. Review* for 1834, vol. xxi., N. S., may be found an account of the successful tying of the common iliac artery by Mr. Guthrie, for what was deemed an aneurism, and afterward proved to be cancerous ; in many respects resembling the case I have just recorded :—

"The patient, a young lady, laboured for some time under pain in the hip, when she accidentally struck it. Soon after this a tumour appeared, and when

¹ System of Surgery, vol. i. p. 258, 5th edition.

it had attained the size of her fist it began to 'beat like her heart;' it continued to increase, and after the lapse of a year she came to town. At this time the tumour was as large as an adult head, situated on the right buttock, and so inconvenient as to prevent her from lying on that side, or even on her back. Separate examinations were made by Mr. Guthrie, Sir A. Cooper, Mr. Thomas, and Mr. Keate. On the whole, they concluded that the tumour was aneurism, and the common iliac was tied by Mr. Guthrie.

"The tumour rapidly diminished in size, and in a month it lessened by one-half. In the course of two months the wound had healed, with the trifling exception of one small point. The operation was performed on the 24th of August, and on the 19th of September the ligature came away; in December or January the patient went to Scotland. The tumour again augmented, and on the 30th of April the patient died, exhausted by disease." The tumour was not aneurism, but a malignant growth of the nature of medullary sarcoma; further on it is said: "It is a fact of which many members of the medical profession are perhaps not sufficiently aware, that very great difficulty frequently exists in distinguishing pulsating medullary tumours from aneurismal sacs. The ordinary means of diagnosis applied to tumours receiving a pulsation from arteries above, beside, or beneath them, are inapplicable to pulsating fungoid tumours, for the obvious reason that their pulsation is occasioned by their own bloodvessels. It is certain that the diagnosis between the two diseases is occasionally so obscure that the most experienced and judicious surgeons are liable to error, and have committed a mistake."

In another case reported in the same journal the femoral artery was tied for what was supposed to be an aneurism beneath the crest of the right ilium, and a fatal result ensuing, the growth was found to be cancerous. The late Dr. G. W. Norris of this city, in 1838, tied the femoral artery in a case at the Pennsylvania Hospital, in which there was a tumour on the upper and outer part of the leg that he and his colleagues supposed was a true aneurism. The growth subsequently greatly increased in size, the patient was re-admitted, and Dr. Norris successfully amputated the thigh. The tumour proved to be of a medullary nature, and no aneurismal disease was present; there was no deviation of the popliteal vessels whatever, the enlargement being due to a globular expansion of the external table of the tibia, its contents being a soft brain-like substance.

Dr. Norris, in his report of the case,¹ states that—

"The cause of the very distinct pulsation upon the patient's first admission can, I think, only be explained by supposing an artery to have given way in consequence of ulceration or rupture from a diseased state of its coats, which, pouring out its blood into the soft matter forming the tumour, produced a state resembling a circumscribed false aneurism."

It would seem as if there ought to be some clear and certain diagnostic signs, whereby we might be able to determine whether or not a tumour was purely aneurismal; yet it would appear that occasionally it has been impracticable to settle this point. Time will determine for us, of course, in all obscure cases; but by delaying until it demonstrates the true nature of the disease conclusively, either by a rupture of the sac or the development of the tumour, we may, by waiting too long, lose any chance for recovery that an operation might have offered our patient.

¹ Am. Journ. Med. Sciences, Feb. 1840, p. 257.

Table of Ligations of large Arteries performed at the Pennsylvania Hospital.

No.	Date.	Sex	Age	Side	Artery ligated.	Disease or injury.	Result	Cause of death	Ligature separated
1	1836	M.	59	Right	Common carotid	Varicose aneurism	Died	Congestion of brain day after operation	
2	1838	M.	32	Left	Femoral	Aneurismal tumour of leg	Cured	.....	17th day
3	1841	M	38	Right	External iliac	Inguinal aneurism	Cured	.....	30th "
4	1842	M	36	Right	Common iliac	Inguinal aneurism	Cured	.....	35th "
5	1844	M	46	Right	Common carotid	Hæmorrhage	Died	On 31st day from hæmorrhage	12th "
6	1845	M	35	Left	Femoral	Popliteal aneurism	Cured	.....	26th "
7	1848	M	24	Right	External iliac	Inguinal aneurism	Cured	.....	17th "
8	1848	M.	49	Right	Common carotid	Carotid aneurism	Cured	.....	20th "
9	1852	M	42	Right	Femoral	Popliteal aneurism	Cured	.....	21st "
10	1864	F.	36	Right	Common carotid	Orbital aneurism	Cured *	.....	17th "
11	1865	M.	26	Right	Femoral	Femoral aneurism	Cured	.....	16th "
12	1866	M.	51	Left	Subclavian	Axillary aneurism	Cured	.....	18th "
13	1866	M.	12	Left	Femoral	Femoral aneurism	Cured	.....	21st "
14	1867	M	51	Right	Common carotid	Innominate aneurism	Died	On 12th day from serous effusion of the lungs	
15	1867	M	57	Right	External iliac	Aneurism of profunda and femoral	Died	3d day from peritonitis	
16	1867	M.	21	Right	Femoral	Arterio-venous aneurism	Cured	.....	8th "
17	1867	M	24	Left	Internal iliac	Pulsating tumour of buttock	Cured	Afterwards died of malignant disease	22d "
18	1868	F	28	Right	Common carotid	Gunshot wound of neck	Cured	.....	28th "
19	1868	M	37	Right	Subclavian	Railroad crush	Died	Hæmorrhage	
20	1868	F	66	Left	Axillary	Wound of brachial	Cured	.....	8th "
21	1869	M.	25	...	Femoral	Popliteal aneurism	Cured	.....
22	1869	M	27	Left	Common carotid	Hæmorrhage	Died	Rupture of jugular vein	
23	1872	M	26	Left	Brachial	Incised wound and secondary hæmorrhage	Cured	.....
24	1873	M.	30	Right	Femoral	Elephantiasis Arabum	Cured	.....	21st "
25	1873	M	30	Left	Femoral	Popliteal aneurism	Cured	.....	10th "
26	1874	M	40	Right	Femoral	Gunshot wound of femoral artery	Died	Gangrene and exhaustion	
27	1874	M	48	Left	Femoral	Popliteal aneurism	Died	Phlebitis	
28	1874	F	23	Left	Common carotid	Supposed intra-cranial aneurism	Died	Cerebral anemia	
29	1876	M.	43	Left	Common carotid	Pulsating orbital tumour	Died	Serous apoplexy	

* February, 1876, continues well

ART. III.—*Syphilis as affecting the Bursæ.* By E. L. KEYES, M.D., Adjunct Professor of Surgery and Professor of Dermatology in the Bellevue Hospital Medical College, New York; one of the Surgeons to the Charity Hospital, Venereal Division. (With one wood-cut.)

It is well known that many of the bursal sacs of the body, those underlying tendons as well as the subcutaneous bursæ, are subject to in-

flammatory processes as a result of traumatism, rheumatism (especially the gonorrhœal variety), gout, etc.

That syphilis might work its peculiar changes upon these little sacs would seem, *à priori*, most probable; for no tissue or structure in the human frame is exempt from the possibility of being forced to pay tribute to syphilis, when once it acquires possession of the body.

That the bursæ do so suffer, I think can be clearly shown, the only remarkable feature in the case being that the lesions of these structures, as caused by syphilis, have hitherto attracted so little general attention.

The literature of the subject, so far at least as I have had access to it, seems wonderfully meagre in facts. It is to be hoped that further contributions may be forthcoming, to make our knowledge more complete.

My personal observations relate to tertiary disease of the bursæ, as do also the few histories of cases I have been able to gather from my professional friends. I desire to express my acknowledgments to Dr. E. A. Banks, of this city, since it was under his care in dispensary practice that the patients first came, whose histories furnish the basis of this article. Dr. Banks has kindly attended to all the details of treatment in these cases, my function having been mainly that of consultation and observation. I am indebted also to Drs. R. W. Taylor, F. P. Foster, G. H. Fox, L. D. Bulkley, and Wm. B. McGuire, for other cases illustrating the subject.

Anatomically a bursa is a joint, and syphilis seems to attack it exactly as it does a joint. The latter, however, suffer more frequently than the bursæ. I cannot venture upon a close, systematic classification of the varieties of syphilitic disease to which the bursæ are subject, since the cases thus far collected would hardly warrant it; but, for the sake of completeness, and in the hope that future observations may fill up the blanks I am obliged to leave, I think I may be pardoned for trusting to analogy, and dividing syphilitic bursitis into two forms, a secondary and a tertiary. Of the first there is but little to say; the second is of far more importance, and its consideration will constitute the bulk of this article.

Secondary Syphilitic Bursitis.—By analogy with the congestive forms of secondary syphilitic disease of the joints and in the sheaths of tendons, it seems fair to assume a similar possible congestion of the bursæ without or with effusion. I find but little reference to secondary syphilitic congestion of the bursæ without effusion in any of the authorities within reach, and unfortunately close notes were not taken of any personal case bearing upon the point, since it was not considered of great importance when the patients were under observation; yet I can recall the suspicion I have felt that the bursa might be congested and sensitive in examining certain cases where obscure pains were complained of early in syphilis about joints, notably behind the ankle, at the inner side of the knee, and over

the shoulder, and can only regret that no opportunity of observing a similar case has come under notice since I have been on the watch for it.

Jules Voisin, in his recent monograph,¹ alludes very vaguely to this point (p. 21), referring to pain in the bursæ as a possible source of error in the differential diagnosis of secondary syphilitic arthralgia; and again more positively (pp. 30 and 32), under the head of subacute syphilitic arthritis, which he mentions as being possibly complicated by a simultaneous and similar affection of "*plusieurs bourses sereuses sous-cutanées ou tendineuses*" (p. 30), referring for support in his assertion to Fournier's description of secondary syphilitic pseudo-rheumatism, and to Adolphe Vaffier's more recent thesis (Paris, 1875), *Du Rhumatisme syphilitique*. No mention, however, is made of bursitis occurring alone, not complicated by arthritis.

A more careful observation in this direction will doubtless reveal cases in future where the lesion may be localized solely in the bursæ, cases which have hitherto escaped notice, because attention has not been directed toward them. In any event, the lesion in secondary syphilitic bursitis without effusion, is a simple one, disappearing under general treatment.

Should the congestive stage of bursitis proceed far enough, however, there would be effusion, as occurs after slight injuries to the bursæ, especially in young subjects; a process, the clinical features of which have been so well described by Gosselin, in a letter addressed to Dr. Duplay, "*Sur la Periarthrite du Genou*,"² and of which I have recently seen a brilliant example.

I have not, however, encountered personally a case of syphilitic secondary bursitis with effusion, but there are two cases, at least, on record. Fournier's recent work,³ on page 706, contains the following note, which goes far to establish the possibility of a bursitis early in syphilis attended by effusion. It reads as follows:—

"J'ai vu de même sur une malade syphilitique à la période secondaire la bourse prérotulienne, devenir le siège d'un hygroma passager. Je ne fait que noter ici le fait, n'ayant eu l'occasion de l'observer qu'une fois."

The second case is still more to the point. It is Obs. IV. in an article by Verneuil, which appeared in the *Gazette Hebdomadaire*, Jan. 10, 1873, on tertiary syphilitic lesions of the bursa.

The patient had an indolent, insensitive swelling of the bursa behind the left olecranon, coming on without any known local cause, and reaching the size of half a hen's egg. The tumour was evidently the bursa distended by fluid. The patient still showed the remains of chancre on the penis, had syphilitic sore throat, and a general roseola. A month of internal treatment dispersed the serous collection.

The above remarks go to show that secondary syphilitic bursitis without or with effusion is not a serious malady.

¹ Contribution à l'Étude des Arthropathies syphilitiques. Paris, 1875.

² Archives Générales de Médecine, Oct. 1873.

³ La Syphilis étudiée plus particulièrement chez la Femme. Paris, 1873.

Tertiary syphilitic bursitis is not so uncommon as the silence of standard authorities would lead one to infer, and it is probable that many cases have been observed which have never found their way into medical literature. I am unable to separate the disease into a gummosis and a hyperplastic form, having no evidence of the existence of the latter in the bursæ. The hyperplastic form of disease due to tertiary syphilis, as found affecting some of the internal organs, notably the testicle, liver, kidney, etc., is essentially a cellular proliferation in the parenchyma of the affected organ, attended at first by increase in the size of the latter, never going on to suppuration, but leading finally to contraction (sclerosis), and in this manner to a spontaneous cure, so far as the morbid tissue is concerned, and this oftentimes without the intervention of treatment, as in the testicle.

I neither find recorded, nor have I observed such a course of affairs in tertiary syphilitic bursitis when not treated. The cases seem all to tend slowly but progressively from the first toward destructive metamorphosis and an elimination of the morbid tissue by breaking down into a softened mass—acting in short like the material known as gummy exudation. I know of no autopsy in any case.

From a purely clinical point of view two forms of gummy bursitis may be recognized; the one occurring by extension of disease originating in a neighbouring tissue; the other starting in the bursa itself.

The first mentioned form is not very important, as the bursal complication is less the malady than is the neighbouring disease, which latter, as a rule, is clearly syphilitic, and diagnosis therefore is easy. Verneuil in his article¹ alludes to a case of tertiary syphilitic disease, where probably the bursa over the olecranon was included in an ulcer, but, as the bone was bare at the bottom of the ulcer, it was of little importance whether the bursa was involved or not.

Two cases observed by me showed very plainly the different steps of the process of gradual extension of gummy infiltration from the skin toward the bursa. One was an old, enfeebled woman. A gummy tubercular syphilide appeared upon her knee, over the bursa patellæ, and went on pretty rapidly to ulceration, destroying the tissues deeply. Treatment cured her promptly before any bursal complication became prominent; but not so in the second case. Here the infiltration, which also covered the patella, advanced slowly with but little ulceration, for thirteen years, kept back by inefficient treatment, which delayed the progress of the malady, but did not cure it. The integument over the whole knee had undergone an elephantiasis thickening, so that, although the knee-joint was sound, its function was seriously interfered with. Several of the clefts and depressions in the solid, indolent tissues over the joint measured very nearly two

¹ Loc. cit.

inches in depth. All the cutaneous and subcutaneous tissues were as hard as wood—but not adherent to the bone, and there was comparatively little ulceration. A few months of mixed anti-syphilitic treatment brought the tegumentary tissues back to a perfectly natural condition, and now beneath the skin and above the bone the bursa patellæ could be plainly felt, like a flattened mass of cartilage, still infiltrated and hard, and evidently remaining the seat of syphilitic deposit after the surrounding tissues had recovered.

It seems to me that the fact that in so many of the cases where the bursa is involved, especially about the knee, the integument participates soon or late to a greater or less extent in the disease, lends interest to cases like the above, although strictly they cannot be classed as cases of syphilitic bursitis.

Tertiary Syphilitic Disease involving the Bursæ primarily.

CASE I.¹ Mrs. —, a widow of 48, always healthy, never sick in bed, never pregnant. I saw her first early in September, 1875. After her marriage she had a bad sore-throat, lasting several months; her hair fell out, and several "little warts," as she calls them, appeared about the vulva. Her husband, as far as she knew, was well. Her disorders lasted about six months, and since that time she has been perfectly well. She cannot remember having had any eruption.

Eight years ago, about two and a half years after the first appearance of her sore-throat, she discovered by accident a painless swelling beneath the skin over the left knee. She was doing kitchen work at the time, but did not scrub, and is not conscious of having hurt the knee. She thinks that the lump when found was about two inches broad and one inch thick. Three years afterwards, by chance also, for there were no subjective symptoms, she found the right knee in a similar condition. She took no treatment, and did not trouble herself about the lumps because "they did not pain or hurt."

The lump on the right knee increased until it reached the size of a large orange, the left attained about half that size, the skin remaining soft, thin, movable, and in every respect natural over both the lumps.

During the summer of 1875, some red, painless pimples appeared in the skin over the lumps. These slowly suppurated and gradually cicatrized into thin livid cicatrices, not pigmented. Three of these sores at one time broke into one. She consulted a physician, who advised knee-caps, and told her not to allow any one to interfere with the knees. For more than a year before inspection, this patient had a pain in the right shin bone, which she ascribed to varicose veins and to being tired. In the summer of 1875, a painful lump appeared on the right tibia, and for treatment of this the patient applied to Dr. Banks, who recognized the lump as a syphilitic node, and put her immediately under the proper remedies. In a

¹ This case was presented to the New York Dermatological Society, on the evening of Jan. 10th, 1876, and at the same time mention was made of the cases of Dr. Foster and Dr. Bulkley. These gentlemen kindly furnished me with written notes subsequently, and I have included them in the cases here brought forward, Cases III., V., and VI.

month the node had disappeared, although the spot occupied by it was still slightly sensitive; the scattered ulcerations over the lumps upon the knees had all cicatrized, as had also a syphilitic gummy tubercle upon the back of the right hand; the lumps upon the knees had each decreased to one-half the dimensions they had when first observed, and presented the appearances observed in the wood-cut.



The artist, using the negative taken from the patient, has reversed the knees.

The right swelling occupied exactly the position of the bursa in front of the patella, lying below the patella when the knee was flexed, directly

over it when the leg was extended. It was insensitve, freely movable in all directions, the skin natural in all respects over it except at the spots marked by the small, thin, livid scars, where it was slightly adherent. The lump had a woody hardness, was somewhat irregular on its surface, symmetrically rounded in all directions, having a transverse diameter of a little over one inch and a half, and a vertical measurement from the patella also of about one and one-half inch. The hardness of the surface was somewhat elastic, and it was impossible to decide whether or not there was any fluid in the sac on account of the general tension of the parts. There was no sensitiveness about the joint, and no interference with function. No heat of skin anywhere. Upon the left knee, exactly symmetrical in position, was another similar lump, as near as can be estimated of exactly one-half the size of the one upon the right side. There had been a small, hard pimple (gummy tubercle) in the skin over this tumour which had disappeared under treatment without suppurating.

This lump is dense and hard, but not so tense as the bursa on the right side. At the base around the deep circumference can be felt several irregular slightly outstanding, lobular, cartilage-like nodosities, exactly similar in feel to the indurated patches, so constantly present in the subserous connective tissue around the larger joints (notably the knee), when involved in tertiary syphilitic disease—the so-called “syphilitic white swelling.”

This left bursa decreased fully three-quarters in size during the month it was under treatment. The patient was satisfied with the result and wished to stop treatment, as the iodide of potassium caused irritation of the stomach.

Two months more of treatment produced still further improvement, but to a much less marked extent. The left bursa decreased to the size of half a good sized Italian chestnut, became very hard like cicatricial tissue, freely movable. The right bursa softened, measured about one and a quarter inch at most in diameter, and three-fourths of an inch vertically. It distinctly fluctuated, the two surfaces could be rubbed together producing a friction sound, and the lump was evidently composed of a central cavity surrounded by indurated patches, which could be more or less clearly separated from each other, especially the central one, including the top of the bursa.

The patient now omitted all treatment for about a month, deeming herself well enough. The lumps, however, did not appear to have increased in size during this period.

This brings the case to date, Jan. 20, when the patient recommences treatment.

Remarks.—In this case symmetrical house-maid's knee appears in a seemingly healthy woman whose occupations do not expose the bursæ to traumatic violence. The bursæ go on increasing in size during eight years, when the skin becomes involved to a trifling extent, and a node appears on the skin. Internal mixed treatment with iodide of potassium in excess during three months cures the node, all the skin lesions, and reduces the bursæ two-thirds in size, the diminution being most marked during the first month of treatment.

CASE II.¹ Mrs. —, 30, scrub girl in a restaurant, came under treatment June 26, 1869, for a large ulcer irregularly oval in shape, its long diameter transverse to the axis of the limb, upon the right leg over the patella. The ulcer was more than an inch deep, its floor uneven, brownish-black, evidently composed of sloughy tissue, discharging a very offensive, thin pus. Its edges were undermined, thickened, everted, of livid red color.

Below this lesion at its outer side was an elevated phlegmonous sensitive spot, accessible by means of a probe from the ulcer above. Pressure upon it caused pus to ooze out into the ulcer.

On the other leg over the patella was a swelling caused by a deep-seated indurated mass which seemed to extend as far down as the bone, but was isolable from the surrounding parts and freely movable in all directions. The tumour was firm to the touch, about 2 by 3 inches in diameter, of flattened shape, raised more than an inch above the surface. The integument was partly adherent over it and slightly reddened. There was no heat of skin and very little tenderness on manipulation. This patient had been infected five years previously; had had ulcers on the legs and other well-marked syphilitic lesions. On the legs, forearms, shoulders, and buttock were large-characteristic syphilitic cicatrices.

Three months of antisyphilitic treatment cured the ulcer, the bursa sloughing out, leaving a rough, seamed cicatrix partly adherent to the bone.

On the left side under internal treatment, first the redness of the integument disappeared and it became soft and freely movable over the tumour beneath. Next interstitial absorption of the tumour went on. It softened and gave to the fingers the sensation of a sponge under the skin, and gradually disappeared, until after four months of treatment no trace of it was left behind, the parts having returned to an absolutely normal condition.

Remarks.—Here the lesion probably commenced in the bursa first and went on to ulcerate on the right side before the patient was seen. This is probable because the bursa was evidently involved on the left side when the patient came first under observation, while the integument was just beginning to participate in the morbid process. The effect of treatment in saving the left bursa which had not been destroyed by the gummy infiltration is very beautiful, while it very naturally failed to restore to life the already necrosed bursa on the right side.

CASE III.² Mrs. —, 33, during several weeks before she came under observation, had noticed the gradual and almost painless growth of a lump over one knee. She could assign no special cause; there was no reason to suspect a traumatic cause. The knee was rendered a little stiff by the tumour. A small opening had formed leading deeply into this lump; and through it a small quantity of thick, transparent fluid had escaped, but without sensibly reducing the size of the tumour.

Examination revealed a circumscribed swelling, consisting of an enlarged bursa patellæ, as large as one-half of a small orange. The walls of the bursa were thickened and rigid, the investing integument of a dusky-red hue, not specially tender on pressure. The small opening mentioned above was situated centrally upon the tumour and led into a considerable

¹ Unpublished. Communicated by Dr. R. W. Taylor, of New York.

² Unpublished. Communicated by Dr. F. P. Foster, of New York.

cavity which was lined with a tough, white, insensible material, bathed with a syrup-like fluid mingled with pus. The other knee was sound.

At first syphilis was not suspected, and, as the discharge from the cavity of the bursa was of an unpleasant odour, creasote water upon lint was used as a dressing. The patient continued under observation during two or three months, meantime showing such manifestations of syphilis as iritis, mucous patches, osteocopic pains, etc. She was therefore brought under the influence of the iodide of potassium, a strong solution of chloride of zinc was used locally once a week, and the character of the lesion slowly changed and went on to cicatrization.

After her recovery the patient gave birth to an immature and macerated child.

Remarks.—This case did not improve at all during two or three months of treatment. But when the iodide of potassium was administered, recovery commenced. That a cure followed so slowly was, perhaps, due to the fact that treatment was not pushed vigorously enough. That the patient was syphilitic is manifest from her history.

CASE IV.¹ Mrs. —, 40, gives a syphilitic history, has nodes on the skin, has had eight miscarriages, and brings for treatment a child with well-marked inherited syphilis. This woman was found to have a slight thickening of the left bursa patellæ, as the remains of double bursitis, which she had suffered from some months previously (not seen by Dr. Fox), and which had disappeared under treatment. She said that she had had a similar attack once before, that a hard prominent lump had formed in front of the knees (but not a swelling of the knee) without causing any change in the colour of the skin. She stated that they had pained her somewhat while walking, and had interfered with scrubbing and other household duties.

Remarks.—This case is evidently double syphilitic bursitis, probably arising from a traumatic exciting cause, and disappearing under treatment. The peculiarity of it is its appearance upon two occasions.

CASE V.² Mrs. —, 24, had chancre and early syphilitic manifestations about one year and a half before she presented herself for observation in November, 1875. Six weeks before inspection, having a tubercular eruption upon the arms and legs and over the knee, she began to feel pain on kneeling, and soon found it impossible to bear her weight upon the right knee in the kneeling posture. Her duties did not expose her knees to injury. Inspection showed a tubercular eruption over the right knee; there was pain on pressure at a point below the patella, the integument over the painful spot was red and hot, the bursa easy to be felt, distended, and fluctuating. Treatment by iodide of potassium caused rapid improvement. The pain, heat, and redness disappeared, and the lump became very much smaller and harder. It is still (Jan. 31, 1876) under treatment and improving.

Remarks.—This case does not fall readily into the description applicable to the others. It is more acute, looking more like a traumatic bursitis,

¹ Unpublished. Communicated by Dr. G. H. Fox.

² Unpublished. Communicated by Dr. L. D. Bulkley, of New York.

or a hygroma caused by hyperæmia, due to the tubercular eruption on the skin. Its rapid improvement, however, under the iodide of potassium, after which it assumed the hardness and indolence usually observed, and the fact that the patient disclaimed all traumatism as an active cause, while the cutaneous syphilide was not ulcerative (as in the two cases given early in this article) make it probable that this was a rather acute case of true syphilitic tertiary bursitis.¹

CASE VI.² Mrs. —, 28, when first inspected had ulcerative syphilitic patches on both knees and on the wrist, which were very painful. Both bursæ patellæ were very markedly enlarged, and faintly fluctuating. The ulcers first healed under internal treatment and iodoform locally, and then the bursæ gradually decreased in size from internal treatment alone—consisting mainly of iodide of potassium.

Remarks.—This patient was observed by Dr. Bulkley in the autumn of 1874. I have been unable to see her, and, although the case was evidently one of tertiary syphilitic bursitis, it is impossible to say that it may not have been an extension from the cutaneous lesions to the bursa secondarily, as in the two cases first alluded to in the second part of this article.

CASE VII.³ Mrs. —, 52, gives a history of syphilis occurring 24 years ago. Dr. McGuire sent the case to me for inspection, but I found the patient so unintelligent that she could not give a connected history of her symptoms. She had a tubercular syphilitic eruption and painful tibiae. Both bursæ patellæ were involved almost precisely as in Case I. They were perfectly indolent, and treatment had effected but little appreciable change in them at the time I saw her. The peculiar feel of separate indurated patches, recalling precisely the arrangement described in Case I., leads me to consider that this case, which was of many years' standing, was also one of syphilitic bursitis.

Remarks.—Treatment had not been followed long enough, or been sufficiently pushed in this case to decide positively as to its syphilitic nature. I introduce it only as a probable case, still under observation.

Dr. Briddon, of this city, recalls to memory (having taken no notes) two cases of tertiary syphilitic disease of the bursa patellæ, one in a man and one in a woman, in both of which the integument was involved in a syphilitic ulcer communicating with the bursa. In both cases, after a liberal use of caustic potash the bursæ were extirpated with the knife, and the gummy infiltration was found in both to have exceeded the limits of the capsule and involved the surrounding tissues. These cases cannot be included in the list, because no notes were taken of them when observed. They are simply cited as instances of the many cases of syphilitic bursitis which must have been observed without being reported. Another case with a syphilitic history, and some positive lesions upon the body, had a

¹ In examining the patient myself in February, 1876, I found her to be hysterically hyperæsthetic.

² Unpublished. Communicated by Dr. Bulkley.

³ *Ibid.*, Dr. McGuire.

swelling appear in the bursa, over one of the external malleoli. This was observed by Drs. Taylor and Briddon. It finally ulcerated, and was cured by the local use of caustic potash, aided by internal treatment. Unfortunately no notes were taken of this case.

In five of the above cases there can be no question of tertiary syphilitic bursitis originating in the bursa patellæ. Case VI. and the second case alluded to, but not numbered (before Case I.), were probably bursitis by extension. Case VII., probably syphilitic, is not clear enough to be classed, and the three other cases alluded to in the remarks under Case VII., although undoubtedly of syphilitic nature, cannot serve for the purposes of this article on account of lack of detail.

A search into the literature of syphilis for cases similar to the above has been singularly unproductive, with the exception of an article by Verneuil and a thesis by Moreau. The text-books seem to be universally silent. Bäumlér, in his article on syphilis in Ziemssen's *Cyclopædia of Medicine*, makes the general statement that the bursæ are subject to serous effusions in syphilis, and that their walls may be the seat of gummous growth. No cases or authorities are referred to and no details given. Verneuil, in an article published by him in the *Gaz. Hebdomadaire*, Jan. 10, 1873,² as a sort of complement to his first article in the same journal, on the lesions of the sheaths of tendons due to syphilis, which appeared in 1868, reports two cases of tertiary syphilitic bursitis; and a third as a possible case where also the bone was involved, the bursa in this latter case being situated over the olecranon. Finally, Moreau, in his thesis presented to the Faculty of Medicine in Paris, August 8, 1873,³ adds to the list from the service of Verneuil witnessed by himself, or communicated by H. Petit, five other observations.

As these seven cases have already been published in French, I shall omit detail, and only state a few points of each in order to give as perfect a picture as possible of the disease.

CASE VIII. (Verneuil).—Felix B—, aged 32; works often in the kneeling posture. Eight and a half years after infection a lump appeared in front of the anterior tuberosity of the left tibia, in the bursa in front of the insertion of the tendon of the quadriceps, which grew in four months to the size of half a pullet's egg. It was hemispheric, indolent, adherent beneath, not fluctuating, of firm elastic consistence. The skin above was thickened, immovable, confounded with the mass, of violet colour. Externally on the tumour existed an ulcer one-third of an inch in diameter, with slightly detached borders, occupying the whole thickness of the skin, with a sloughing base. Knee-joint sound. Three weeks of treatment cured the ulcer, and caused the absorption of the bursal tumour, which did not slough out.

CASE IX. (Verneuil).—A young man, five years after infection, had a lesion come out symmetrically on the inner side of each knee after prolonged exercise on horseback. There appeared a triangular tumour, nearly an inch high.

¹ American edition. New York, 1875, p. 176.

² Les Lésions syphilitiques tertiaires des Bourses sous-cutanées et tendineuses.

³ Des Affections syphilitiques tertiaires des Bourses séreuses.

The anterior border was parallel to, and laid over, the tibia. The other borders converged to unite posteriorly toward the upper and back part of the internal condyle of the femur. The tumour followed the movements of the tibia, was indolent, firm, without fluctuation, skin unchanged, and interfered only very slightly with walking. Verneuil located the lesion in the bursa lying between the internal lateral ligament of the knee-joint and the insertion of the conjoined tendons of the semi-tendinosus and gracilis muscles (*bourse de la p^ate d'oie*). Ricord saw the patient and agreed to the diagnosis, and to the location of the lesion. After five or six weeks of the iodide of potassium in large doses internally, and local mercurial frictions, the tumours disappeared, leaving no trace behind.

CASE X. (Moreau).—A syphilitic woman of 34, six weeks after a fall on the knee, developed a tumour over the inner side of the knee (side not given), which reached in six weeks the size of a hen's egg, was painless and elastic. The integument over it was natural to all appearance. The tumour got well in one month under mixed treatment.

CASE XI. (Petit).—A syphilitic man of 64 had a tumour in the bursa over the internal malleolus of the left tibia—small, lenticular, fluctuating, painful on pressure. The integument over it was livid, and there was no history of injury. The tumour was opened with a bistoury, and discharged a few drops of a puriform liquid. No treatment was administered. The cut surface ulcerated, and extended without suppuration, became fungous, the integument undermining around it. It was then cauterized energetically with nitrate of silver, and, its syphilitic nature being suspected, a mixed treatment was instituted. On examination a crust of rupia was found upon the patient's sternum, and he confessed to having had chancre forty years before. The rupial spot quickly healed, but it required four months of internal treatment to complete the cicatrization of the bursa.

CASE XII. (Petit).—A man, aged 33, six and a half years after chancre, followed by eruptions, had his left little toe amputated for a perforating ulcer which originated in the bursa, under a corn on the dorsal surface of the toe. Two months afterwards, on the sole of the foot under the metatarso-phalangeal articulation of the great toe, where there had been a corn, an inflammatory thickening of the bursa under the skin came on, which promptly ulcerated. This ulcer, which interfered with walking, increased gradually for a year, reached a diameter of one inch, had sharp cut borders, and a gray, bloody base, and was surrounded with a livid areola. After the diagnosis had been made, one month of mixed treatment cured the patient.

CASE XIII. (Petit).—In the palm of the hand of a workman of 33, an inflammatory process set up, causing a painless tumour of the size of half a nut in the subcutaneous bursa, which is normal to men who use their hands in working, under the second metacarpal bone. The patient had other tertiary syphilitic lesions. Prompt recovery followed a mixed treatment.

CASE XIV. (Petit).—A man of 34, seven years after his chancre, had noticed a lump which appeared subcutaneously over the olecranon on the right side, and came on insidiously. This tumour, when inspected, had already existed eight years, was about as large as a small nut, ulcerated centrally, of livid colour, but slightly sensitive on manipulation, and occupied the position of the bursa over the olecranon. A fortnight before the patient's entrance into hospital fluctuation had been detected in it, and it had been incised, giving exit to a small amount of bloody pus. This cut ulcerated, and became fungous. The bone was not bare. One month of mixed treatment caused very marked improvement, and the patient left the hospital, although not yet well.

The above cases I believe to be all instances of tertiary, syphilitic bursitis, strictly speaking—that is, exclusive of such disease of the bursa as might be merely an extension of a gummy deposit near by, in the bone, tendon, connective tissue, skin, etc. The three cases included in the remarks after Case VII. cannot be used in this study for lack of accurate

detail in the notes concerning them. To avoid all possible sources of error, Case VII. should be excluded, as the diagnosis in this case is not, at the moment of writing, confirmed by the result of treatment (for lack of time); and Case VI., as being one, possibly, where the bursal disease may have been due to extension of skin lesions. Without these cases the prominent features of the others may be grouped as follows:—

Cases of Tertiary Syphilitic Bursitis.

Case.	Sex	Age.	Situation of bursa.	Date of lesion after chancre.	Duration before commencing treatment.	Traumatic exciting cause.	Integument involved.	Pain.	Remarks.
I.	F.	48	Both patellæ	2½ years	8 years	None	Yes	Absent	Rapid improvement from internal treatment. Bursa contained fluid.
II.	F.	30	" "	.....	.....	Probable	Yes	Absent	Rapid cure; internal treatment.
III.	F.	31	One patella	.....	.....	None	Yes	Slight	Slow cure; fluid in bursa.
IV.	F.	40	Both patellæ	.....	.....	Probable	No	Slight	Both bursæ twice affected. Recovery under treatment.
V.	F.	24	One patella	18 mos.	6 weeks	None	Yes	Present	Acute inflammatory symptoms with effusion. Prompt improvement under treatment.
VI. VII. VIII.	M.	32	Tuberosity of tibia	8½ years	4½ mos.	None	Yes	Absent	Prompt recovery.
IX.	M	y'ng	Under insertion of semitendinosus on both sides	5 years	.....	Present	No	Absent	Prompt recovery.
X.	F.	34	Same, one side	.....	6 weeks	Present	No	Absent	Prompt recovery.
XI.	M	64	Over malleolus	.....	.....	None	Yes	Slight	Prompt recovery.
XII.	M.	33	Under corn	6½ years	.....	Present	Yes	Slight	Prompt recovery.
XIII.	M.	33	Palm of hand	.....	.....	Present	Yes	Absent	Prompt recovery.
XIV.	M.	34	Over olecranon	7 years	8 years	None	Yes	Absent	Prompt improvement.

The foregoing cases are sufficiently numerous to make them worthy of surgical interest. They establish the fact that the bursæ, as well as the joints and sheaths of tendons, may receive the peculiar visitations of syphilis, and by the prompt effect of treatment, in many of the cases they attest the great value of accuracy in diagnosis in this disease.

It is to be regretted that the cases are not more numerous, but still it seems proper from what there are to trace the outlines of the clinical features of the affection, while waiting for a report of other cases of the disease to fill in the picture. As Cases VI. and VII. might be objected to, I shall not consider them further.

It appears then, in *résumé*, that secondary syphilis attacks the bursæ as a congestion, which, as in the early joint congestions of secondary

syphilis may be accompanied by pain, but which is indolent when it goes on to effusion.

That tertiary syphilis, when primarily affecting the bursæ, is in all cases insidious in its course, and indolent at first, never becoming painful until the integument is involved secondarily. The one exception to this rule, Case IV., cannot be taken in evidence, since the fact of pain depends merely upon the memory of the patient, the physician observing the case not having seen it until some time afterwards. When the integument becomes involved, some pain is to be expected, as observed in a few cases.

The bursæ occasionally fluctuate slightly, and probably always contain some fluid between their thickened walls, although palpation may not detect it. The presence or absence of an appreciable amount of fluid, however, does not affect the character of indolence, which seems to be common to tertiary bursitis (unless complicated by actual inflammation) with many other tertiary lesions. Case V. is peculiar in being the only one where the inflammatory phenomena with pain were at all marked. This is certainly exceptional, and possibly due to a cause not noted at the time.¹

In one-half the cases a traumatic exciting cause may be accused of calling out a local expression of disease; in the others there is no evidence of any such complicating cause. In all, the history, course, and result of treatment mark the malady as essentially syphilitic.

In the six cases where it is mentioned, the average date of appearance of the affection after chancre was (shortest $1\frac{1}{2}$, longest $8\frac{1}{2}$ years) a little over five years.

Whenever two bursæ were evolved at the same time in one patient, they were symmetrical. Of the 12 cases, in 8 the bursæ affected were situated about the knee; bursa in front of the patella double, three times; single, twice; bursa over tuberosity of tibia, once; bursa between insertion of semi-tendinosus and lateral ligament of knee, double, once; single, once. In the other four the bursa involved was in each case unilateral; once, over malleolus; once, under corn; once, in the palm of the hand; once, over the olecranon.

The average age of the patients was about thirty-five.

Both sexes seem to suffer equally, but in all the females the bursæ about the knee were alone involved.

Treatment always afforded relief, which was generally very rapid and brilliant, especially at the beginning of an active course. Very speedy cure was effected in some of the cases. Mixed treatment in one of its forms, the mercury being used externally or internally with iodide of potassium in excess internally, seems to yield as good results as can be desired.

210 MADISON AVENUE, NEW YORK, Feb. 10, 1876.

¹ My recent observation of the case leads me to believe that hysterical hyperæsthesia was somewhat to blame for the pain.

ART. IV.—*Headaches from Eye Strain.* By S. WEIR MITCHELL, M.D., of Philadelphia; Member of the National Academy of Sciences.

DURING the year 1874, I called the attention of the profession to the cerebral symptoms resulting from disorders of the refractive or accommodative apparatus of the eye.

The instructive facts I am again about to ask attention to are certainly not required by ophthalmic surgeons, and I trust, therefore, that I shall not be looked upon by them as teaching a needless lesson. My consultations have plainly enough taught me that hardly any men in the general profession are fully alive to the need of interrogating the eye for answers to some of the hard questions which are put to us by certain head symptoms, since many of the patients treated successfully by the correction of optical defects never so much as suspected that their eyes were imperfect. What I desire, therefore, to make clear to the profession at large is—

1. That there are many headaches which are due indirectly to disorders of the refractive or accommodative apparatus of the eyes.

2. That in these instances the brain symptom is often the most prominent and sometimes the sole prominent symptom of the eye troubles, so that while there may be no pain or sense of fatigue in the eye, the strain with which it is used may be interpreted solely by occipital or frontal headache.

3. That the long continuance of eye troubles may be the unsuspected source of insomnia, vertigo, nausea, and general failure of health.

4. That in many cases the eye trouble becomes suddenly mischievous, owing to some failure of the general health, or to increased sensitiveness of brain from moral or mental causes.

In seeking to prove these propositions I shall use some of the cases which I have already given in the *Reporter*, and others which I have since seen, or which have been put at my disposal by friends who are engaged in the practice of ophthalmic surgery.

I may here remark that the books on diseases of the eye scarcely more than allude to the distressing cerebral symptoms of which I have spoken, except when discussing the subject of accommodative asthenopia from hypermetropia. Yet in practice almost all of the extreme refractive or accommodative eye troubles give rise in a certain proportion of people to these symptoms, while in those who are congenitally sensitive, or who become so in after life, even slight optical defects, especially when unequally developed in the two eyes, may also give rise to like annoyances.

I have certainly seen cases in which the form of headache caused by eye troubles was a pure migraine or hemicrania, but this I believe to be rare; while I am also sure that in many persons who are already the victims of migraine it has been made worse and more frequent by the over-use of

defective eyes, as, indeed, it may be from any cause of exhaustion, and has been again lessened in severity and as to number of attacks by proper correction of the eye disorder. Dr. Liveing, in his interesting and thoughtful work on sick-headache (*i. e.* megrim), states that M. Piorry long ago described megrim as capable of being caused in those with weak eyes by straining at near or minute objects, and this is doubtless the case; but the form of head-pain to which I am about to refer is certainly not, as a rule, of the nature of megrim, and, as it soon disappears when the eyes are corrected, is lacking, happily, in the obstinacy of that distressing malady.

The following cases fairly illustrate the first two of the propositions I have stated above. First of these I put the following case, because it was the one which earliest opened my eyes on this subject. My tardy knowledge certainly cost my patient a long period of unrelieved distress.

CASE I. Mr. B., a prominent merchant, consulted me for pain in the upper spine and occiput. It increased day by day every winter, and left him during his summer, which was spent in shooting and fishing—a tent-life, in fact. Mr. B. was even cauterized in New York for these pains, and here at home he had much able advice besides my own. When I first saw him, I was thoroughly misled. It was late in the winter, and, as usual, while in the autumn only writing at first, and then later reading, and then any near work caused pain; as time went by there came a period when all mental labour, when excitement, emotion, or any thought caused pain. He was in this over-sensitive state when I saw him, and was aided by nothing I did. His holiday cured his head, and on his return some friend, I believe, suggested to him that his eyes might be weak, and with this idea he consulted Dr. Wm. Thomson, who gave me the following additional particulars from his note-book:—

“Writing has become so distressing to this gentleman, that for a year past all letters have been written by a secretary, at his dictation. He states that a few moments spent in writing give him a creeping sensation up the spine and through the back part of the head, followed by giddiness and severe pain, so urgent as to render him fearful of a ‘fit of some kind.’ His sight was, for distant objects, $\frac{1}{2}$, and was improved by a concave cylinder glass $\frac{1}{8}$, which he had obtained from a prominent ophthalmic surgeon; and with this his sight was $\frac{1}{2}$, or up to the normal standard; but despite this success, his headache and other nervous symptoms were unrelieved.

“It was suspected that this would prove to be a case of compound astigmatism, and that he had overstated his myopia on the previous examination, and that the diagnosis had been considered correct by obtaining the full sharpness of sight by a $\frac{1}{16}$ cy. It was conceived that there might be latent hypermetropia, and that in overcoming a long-sighted meridian he would over-state a myopic one, and thus be provided with a correction for short sight which would give sharp sight, but leave him hypermetropic, and therefore oblige him to keep his ciliary muscle in vigilant and constant exercise in viewing distant as well as near objects.

“On paralyzing his accommodation with atropia, this was found to be correct, and the hypermetropia was found to amount to $\frac{1}{32}$. His formula for the astigmatism was $+\frac{1}{32} \text{ C} - \frac{1}{16} \text{ cy. ax. } 10^\circ$, and this correction gives him an acuity of vision $= \frac{15}{x}$, or above the average standard. On using these glasses habitually, his distressing symptoms quickly disappeared; he has long since

forgotten his apprehensions of an impending apoplexy or epilepsy; he can see as sharply as any of his companions, and he can use his eyes continuously in reading, writing, or any other near work."

Relief in this case followed at once the use of glasses, which proved competent, without other means, to conduct him to perfect and useful health again.

The following case will answer to show how profoundly the whole system may be perturbed by an ocular defect.

CASE II. Miss J., an accomplished and energetic single lady, æt. 30, from New Jersey, having the care of a sick mother and of a household, began some five years ago to have evening headaches, pain in the back of the head and neck, sense of extreme fatigue and violent flushing if she persisted in exerting her mind in writing or reading. Unfortunately a portion of her income and much of her pleasure in life depended upon her ability to write, so that for a long time she continued to do so, despite the increase of all her troubles. When at last she came to me a feeble, nervous, anæmic woman, sleeping little, and cursed with headache almost constantly, I confess that for nearly two years whilst I saw her at intervals I looked everywhere but to her eyes for the cause of mischief. At length, after a most unsatisfactory winter of rest from work, freedom from care, and many tonics, I made a more careful study of her eyes, and, having grown sure that they were imperfect, asked her to consult an ophthalmic surgeon. At this time the use of the eyes brought about pain in them and sense of fatigue, whereas at first the headaches, which came only after long use of the eyes, were, as I have said, unaccompanied by any sense of trouble in the eyes.

Dr. Thomson, whom Miss J. saw, sends me the following notes:—

$$\text{"April 19. } \begin{matrix} \text{Rt.} \\ \text{Lt.} \end{matrix} = 20 \begin{matrix} \text{xx} \\ \text{xxx} \end{matrix} \quad P \begin{matrix} 5\frac{1}{2}'' \\ 5\frac{1}{2}'' \end{matrix}$$

Rt. Atropia reduces V to $\frac{20}{LXX}$. The appearance of the optic disk indicated

an astigmatism, and the V was found to be increased to $\frac{20}{XX}$ by the following

glass, viz.: $+ \frac{1}{8} \subset + \frac{1}{8}$ cy. ax. 90° . Lt. Atropia, V reduced to $\frac{20}{CC}$,

increased to $\frac{20}{XX}$ by the following glass: $+ \frac{1}{8} \subset + \frac{1}{8}$ cy. ax. 90° .

"There was no muscular insufficiency.

"Seen again May 26th. Headache has disappeared, sleeplessness has vanished; can read and write without pain; uses glasses constantly. In October this lady was seen again, and pronounced herself long since relieved and able to use her eyes constantly, with the correction, in all near work."

I myself saw this lady anew this autumn. The change in her appearance was remarkable, and was, I think, solely due to relief of the strain with which she used her eyes.

The headache left early, and with it went the sleeplessness. Once able to slumber and to get rest, the body swiftly repaired damages, and, the anæmia also departing, a general gain in flesh, colour, and strength were the results.

Two more cases of like character are placed at my service by Dr. Thomson.

CASE III. Mrs. S. was seen October 10, 1875, *æt.* 35, general health good. For years she has suffered from neuralgic pain in the eyes and head, which has never been relieved by any method of treatment. This pain would be induced by a visit to any brightly lighted place of amusement, or by an effort to read at night; the eyes would feel tired, next morning, there would be a dull ache over the forehead, and any motion of the eyeballs would cause soreness in the orbits; an acute pain in one or both eyeballs would follow later in the day, pulsatile in character, and aggravated by stooping; this would extend to the temples and then to the back of the neck or lower part of head, would cause nausea, render her very irritable, and compel her to retreat to a dark room and to bed; no relief would follow until she slept. These attacks were, in frequency, one or two a week, would destroy her appetite, and render her thoroughly wretched. She was thus compelled to avoid places of amusement, and was unable to sew or read beyond a short time, either by day or night.

Rt. $\text{I}^{\text{Rt.}}$ was 20 $\frac{\text{XL}}{\text{XL}}$. She could read $1\frac{1}{2}$ S. at 6". Atropia reduced $\text{I}^{\text{Rt.}}$ $\frac{\text{Lt.}}$

to 20 $\frac{\text{cc}}{\text{cc}} = \frac{1}{10}$; both eyes were found astigmatic, and were corrected by

Rt. $\frac{1}{2} \text{f} \subset + \frac{1}{36}$ ey. ax. 75 $V = \frac{20}{\text{XX}}$ }
 Lt. $\frac{1}{2} \text{f} \subset + \frac{1}{21}$ ey. ax. 90 $V = \frac{20}{\text{XX}}$ } with the accommodation paralyzed.

The measure of the strain she was under without glasses is shown by the reduction of V from $\frac{20}{\text{XL}} = \frac{1}{2}$ to $\frac{20}{\text{cc}}$ or $\frac{1}{10}$, by atropia, and the supreme

power of the glass to aid her was shown by its giving ten times more acuity of vision, without her voluntary aid, the accommodation being then yet paralyzed.

Dec. 23. She reports that she has used the glasses for all near work, and occasionally for distance; that she has had but one or two slight headaches. She finds that there is no strain with them on in reading, and that she can use her eyes in that manner indefinitely, even at night. She is now convinced that her discomfort was all due to an eye strain, which the correction entirely relieves.

CASE IV. Miss E., *æt.* 36, June 14, 1873, states that she had no trouble during school life, but that at sixteen years of age she had typhoid fever, and that since that time she has been unable to use her eyes for any near work. During the past sixteen years she has read three books, and can only now glance over the headings in the newspapers. She is unable to read music, cannot now read ordinary print for more than half a minute without pain, which, if she persists in the use of the eyes, becomes a severe disabling headache, which continues for hours. She has slight conjunctival hyperæmia, with an enlarged condition of the vessels which penetrate the sclerotic near the corneal border. The general health is depressed from the confinement to the house, which is enforced by the photophobia. She

states that last summer she derived no benefit from a three months' visit to the country, since her dread of light compelled her to spend the time in a darkened room, and from this cause she has never been able to secure any rest for her eyes by regarding distant objects only in the open air. She has no confidence in any method of treatment, and will prove a troublesome patient.

The V Rt = $\frac{20}{XXV}$ is the same with $+\frac{1}{36}$ sp. Atropia by paralyzing accommodation reduced the V to $\frac{20}{LXXX}$, and astigmatism was found, which was corrected by $+\frac{1}{8}$ s. $\odot +\frac{1}{8}$ cy. ax. 60° which increased V to $\frac{20}{XX}$.

Left $V = \frac{20}{C}$, the refraction seemed to be M and H combined. Atropia reduced V to $\frac{20}{CC}$, one meridian was found E, and the other H, and a $+\frac{1}{20}$ cy. ax. 100° increased V to $\frac{20}{XX}$. These glasses were ordered, and after the A returned she could read with both eyes at $6''$; there was no insufficiency. $V^2 = \frac{20}{XVI}$.

Aug. 20 Has used glasses only occasionally for near work; finds no benefit from them; the right has dropped out of the frame, and I find it with the ax. of cy. 90° wrong. This was rectified, and she was urged to use the glasses constantly, but failed to comply. In October she could read and sew for a short time only. Thus passed the winter, and she again returned in May, 1874, complaining of the old pain with or without her correction, and able to read but five minutes. The glasses were found to

be according to formula, V with them was $\frac{20}{XX}$, A. = $\frac{1}{4}$. No insufficiency.

No sign of disease beyond the congestion of the deep communicating vessels which penetrate the sclerotic. She was now told that she must either use the glasses absolutely constantly when awake for distant as well as near objects, or give up any further treatment at my hands. She was ordered to try the douche, and to pursue a method of graduated use—both of which were found unnecessary, since a relief from pain followed in a short time upon the constant use of the correction, and she reported in March, 1875, that soon after the advice of May, 1874, her pain and photophobia disappeared, and she was able to read for several hours daily. She was also enabled to adopt an out-door life, to the great improvement of her health.

Dec. 1875. She reports herself as perfectly comfortable, and only distressed at the loss of sixteen years of useful life, and now able to read or sew as much as she wishes.

The cases just told seem to me enough to prove that the eyes may long rest unsuspected as the cause of headache, and of other intra-cranial distresses and disorders. Case 2d is the more remarkable of those which illustrate this fact, because when attending this lady I was already on my guard as to this cause of headache, and yet was for a long time altogether misled. Who, indeed, could have supposed that a mere ocular defect could

have given rise to so serious a train of evils—beginning with headache and ending in an unconquerable anemia—and who that had not seen it could believe that the correction by glasses of the eye trouble could have given a relief so speedy and so perfect that she herself described it as a miracle?

CASE V. Was a well nourished intelligent lady, æt. 27, from Maryland. She consulted me for certain nervous troubles, and on account of pain in the back and intense and frequent headaches. The spinal annoyances grew better under proper interior treatment, being caused by inflammation of the neck of the womb, but the other symptoms continued unaltered. The nervous symptoms usually followed her headaches, and consisted in slight but prolonged hysterical states. The head was rarely clear or well, but almost every day she had severe headache, usually frontal, without sense of ocular fatigue, and increasing towards nightfall. As she did not speak of her eyes at all, or of trouble in their use, I attended her some time before my attention was drawn to them, and it was only at last, when, other means failing, I made a full re-examination of her case, that I came to suspect there was an optical disorder. I learned then enough to ask her to consult Dr. Wm. Norris, whose notes I add. Long after her headaches had begun she experienced a sudden increase from attempting to read, but this failed to awaken any suspicion as to the true cause of trouble, and it was only rarely, and I believe recently, that when she read or wrote fatigue and pain arose in the eye. The following are Dr. Norris's notes of the ocular condition:—

A careful examination of the eyes showed in the right a visual acuity of $\frac{20}{cc}$. Left $\frac{20}{xxx}$. In the right a myopia of $\frac{1}{15}$ with a myopic astigmatism of $\frac{1}{36}$, and with corresponding glasses, viz. — $\frac{1}{15} \subset$ — $\frac{1}{36}$ cy. axis vertical $V = \frac{20}{xx}$. In the left eye there was a hypermetropic astigmatism

of $\frac{1}{15}$ in the horizontal meridian, and with $+\frac{1}{36}$ cy. axis vertical $V = \frac{20}{xx}$.

I resolved to give her a remote point of eighteen inches, and, therefore, ordered for reading glasses, right eye — $\frac{1}{36}$ cy. axis vertical, and left eye $+\frac{1}{15} \subset + \frac{1}{36}$ cy. axis vertical. With these glasses she has been able for several months to write and read with comfort, and has entirely lost her headaches. The case is also interesting as an instance of how, in spite of the great difference of the refraction of the two eyes, the patient nevertheless could comfortably use both simultaneously, and so enjoy binocular vision.

The relief given in this case was almost immediate, but some time elapsed before the headaches were entirely lost.

Dr. Wm. F. Norris sends me the following very striking case of hypermetropic astigmatism, in which there was no eye pain, but violent headache, described as neuralgic, with nausea and vomiting. The relief given by glasses was absolute and abrupt.

CASE VI. Miss L., æt 22, complaining that for five or six years past she has been obliged to abandon any useful occupation and most of her amusements, in consequence of severe neuralgic headaches. She notices that they are much aggravated by any attempt to use the eyes, and says that the sight becomes dim, that the headache comes on violently, the pain

being in the top of the head. If she persists in using her eyes, these symptoms are accompanied by nausea and vomiting. She has never had any pain in her eyes. Under the direction of her family physician, she has tried all sorts of remedies for her neuralgia, and is now in despair as to any improvement, having lately been obliged also to give up even playing piano, because looking from the notes to the keys "made her sick." In each eye $V = \frac{20}{6}$, ophthalmoscopic examination shows healthy disks and

fundus, but a high degree of hypermetropic astigmatism. Treatment advised: instillation of atropia, a careful determination of the refraction, and, this having been ascertained, the permanent wearing of suitable glasses.

After atropinization the following glasses were selected: Right eye $+ \frac{1}{2} \text{ C} + \frac{1}{8} \text{ cy. axis at } 105^\circ$. Left eye $+ \frac{1}{8} \text{ C} + \frac{1}{8} \text{ cy. axis at } 75^\circ$. These glasses bring vision to $\frac{20}{xxx}$ for the left eye and $\frac{20}{xl}$ for the right.

She was directed to wear them "as she does her clothes, from the time she gets up till she goes to bed," and six weeks later presents herself, stating that headache and nausea have entirely disappeared, and that she can once more employ herself in reading, writing, and sewing like other people.

The following case of simple myopic astigmatism causing neuralgia, well localized, is somewhat unusual; I owe it to the kindness of Dr. Harlan:—

CASE VII. A lady, about forty years of age, in fair health but not strong, and of nervous temperament, had been annoyed for many months with an indistinctness of vision and slight pain in the eyes, which were attributed to severe headaches to which she was subject. The headache, which was of a neuralgic character and confined principally to the supra-orbital region, was almost constant, but was more violent at times, particularly after an attempt to use the eyes in reading or any near work.

The eyes were found to be healthy but astigmatic. A $-\frac{1}{30}$ cylinder with its axis at 180° for the right eye and a $-\frac{1}{24}$ cylinder, axis 15° , for the left gave $V = \frac{20}{xxx}$. These glasses were given to be worn constantly

except when she was engaged in near work. As, after the correction, the power of accommodation was found to be deficient ($a = \frac{1}{12}$) and the dot and line test, with vertical diplopia, showed an insufficiency of the internal recti of 4° , another pair of glasses was ordered for reading, etc. In the the astigmatism was corrected by making the emmetropic meridians equally myopic with the others, and the cylindrical surfaces were formed upon prisms of 2° each with their bases inwards (Rt. $+ \frac{1}{30}$ cyl. ax. 90° C prism 2° base in. Lt. $+ \frac{1}{24}$ cyl. ax. 105° C prism 2° base in.).

In a few weeks she wrote me that, though there had been a great improvement in this respect, she could still not read as continuously or comfortably as she would like, but that, at other times, her eyes were quite at ease, and the headaches had disappeared.

The third proposition, to the effect that vertigo of most alarming character, as well as other intra-cranial symptoms, may be the chief expressions of eye lesions, is illustrated by the following cases:—

CASE VIII. Miss B., æt. 16, was well until her periods began, and these being copious, she found that for several days afterwards she had headaches, which came only upon use of the eyes, and were less grave as the month of interval passed by. I suspected the cause, and, in fact, learned that she had unequally myopic eyes. I advised that these should be corrected, but as her family physician insisted that she must have had the eye lesion always, and could, therefore, not be suffering suddenly from what had always been present—she was easily persuaded to yield to her own dislike of glasses, and so nothing was done save only to strive to lessen the menstrual flow.

After a year more, she came back to me with an addition to her symptoms of occasional unsteadiness of gait with sudden sense of terror and vertigo. The headaches were no better. In a half-conscious self-defence she had given up sewing and writing, and read little, yet still the headaches continued because she had now reached that advanced stage of sensitiveness in which the ordinary every-day use of the eyes was hurtful. Of late, too, her rest was broken and disturbed by dreams. Meanwhile, also, she had been re-examined, and, by the aid of the ophthalmoscope, discovered to have cerebral anæmia, because, as I was told, the headaches went away in the night, when, owing to her prone position, more blood went to the head.

The ophthalmoscope is just now where the stethoscope was forty years ago, and is called upon to do things which I do not think it can do, so that I am grown a little suspicious of statements as to diagnosing by the eye-ground vessels the amount of blood in the head. Save only in the case of gross lesions, the value of the ophthalmoscope has been overrated. I, at least, am unable to diagnose slight degrees of cerebral anæmia from the state of the vessels of the disk.

My patient had been endlessly treated with tonics, but, somehow, none did any good, and she was surely hastening towards a course of uterine treatment, the usual goal in difficult cases of obscure disease in women. At this time I urged her to travel in Europe, and while there to have her eyes corrected. She took the agreeable part of my advice, but, gaining little from a few months of too rapid and wearying travel, again wrote to complain of increasing headaches and of more frequent spells of ocular vertigo. I could only urge anew the correction of the eyes, especially since she had improved in colour and as to gain of flesh, with no like bettering of the cephalic troubles. This time she took my advice and was persuaded to wear her glasses steadily. At first the vertigo grew worse, but soon both it and the headaches and insomnia passed away, so that in a month she was able to sew, write, or read for hours at a time.

This briefly told case is somewhat instructive, but I have given it chiefly because of the vertigo, which is seen in some instances, but which few physicians would suspect to be due to troubles in the eye; nevertheless, I have learned to look to it as one source of the symptom vertigo. There is an ocular vertigo as well as an aural vertigo, and I believe that I have seen it under three sets of conditions. Thus it is sometimes caused by a sudden lessening of intra-ocular pressure, but is more often seen in cases of disorder of the accommodative, or of the extra-ocular muscles; being,

after all, neither so common nor so easily caused as the analogue, aural vertigo. Usually, indeed, it comes only after the eye trouble and some other cause of general weakness have made the *intra-cranial circulation* unstable. Occasionally, as I believe the oculists know, a dose of atropia used in one eye will bring it suddenly; and this is more notably seen in persons whose balancing power is already affected by posterior spinal sclerosis or by cerebellar growths. Perhaps the most important, because the most misleading point in all of this subject, is the fact that such as are in sturdy health are often able for years to overcome, without sense of strain, muscular difficulties in binocular accommodation, and to endure unharmed astigmatism with accommodative troubles. But with increase of years their powers fail, and they begin to feel the added exertion now needed in some shape—either in eye or head, or in both. Or else it chances that to one of these people comes an attack of illness, a moral or emotional strain, or a time of over-work with worry, when at once the eye trouble leaps into mischievous prominence, and once felt is felt through all the future more and more by a brain which, in the language of the photographer, I might aptly describe as having become over-sensitized. I have seen in my own practice, or in that of others, examples of this sequence, but, as the following case is a brilliant instance alike of the evil and the cure, I shall content myself with it alone.

In a few examples, as in this one, the perturbing cause which gives force, for evil, to the eye troubles, is of such brief duration that it seems hardly possible it could have been efficient for mischief, yet the following case attests the truth of my statement.

CASE IX. M. C. B., æt. 51, lawyer. A short, well-built man, in good health until September 7th, 1874. Up to this date he had no disease, and no sense of difficulty in the use of his eyes. At this time he experienced during one night the most intense anxiety, owing to the extreme illness of a near relative. During the night he had vertex headache, and, while writing, at times found the letters misty, or that he could not see them for a moment. The pain came on two hours later, with excitement of mind, and a feeling as if he was in peril of losing control of his actions. Early in the morning he used ice to the head, which eased him so that he slept two hours. The same symptoms, in a lessened degree, continued all next day. Then gradually he grew better, and was well on the fourth day. From this time, however, he began to have certain head troubles on reading or writing.

I saw him in October, 1874. If he read or wrote, within two minutes he began to have an uneasy feeling in the scalp, a sense of heat in the head; and soon, if he persisted, a dull sense of increasing pain, chiefly on the top of the head, or at the back. After using the eyes an hour, the pain became fixed on the vertex, and lasted all day. Rest, and a stay at the seashore brought relief; new use of the eyes restored the pain to its old seats. The heart, kidneys, and stomach were healthy. There was no vertigo, no ear troubles, no numbness.

After repeated study of his case, I felt sure he had ocular defects; and

therefore, explaining my views to him, I asked him to see an ophthalmic surgeon.

Dr. Wm. Thomson, to whom he went for advice, writes as follows concerning him:—

"This gentleman, on October 7th, informed me that for a month past any prolonged attempt to read or write would cause a dull heavy ache in the vertex and occipital region, which would continue all day long, and that it had become so severe that for the past five days he had not been able to read at all. He was fifty-one years old, had never used glasses except for near work, and used for this purpose $+\frac{1}{12}$. The acuity of each eye was $\frac{20}{xxx}$, and this was further reduced by the instillation of atropia to $\frac{20}{l}$.

By the ophthalmoscope and other tests, it was found that he had long sight in different degrees in the same eye, or long-sighted astigmatism, and, with this exception, his eyes were entirely free from disease.

"His optical defect was found to be $=\frac{1}{24}$ for lines at 120° , and $=\frac{1}{24}$ for lines at 30° , and his acuity of vision was increased from $\frac{20}{l}$ to $\frac{20}{xx}$ or $\frac{1}{1}$ by a combination of spherical and cylindrical glasses, as follows: $+\frac{1}{4}\frac{1}{2}$ s. $\ominus +\frac{1}{6}$ cy. ax. 120° . He was directed to use this constantly, to save the strain upon his accommodation, which, before the use of atropia, enabled him, by a constant effort, to preserve his acuity of vision at $\frac{20}{xxx}$, with paralyzed accommodation, his vision was really but $\frac{20}{l}$. His old

sight was likewise corrected, for all near work, by $+\frac{1}{16}$ s. $\ominus +\frac{1}{16}$ cy. ax. 120° , and he was directed to use the latter for all reading and writing.

"November 1. He reported that he could not dispense with the distant glass, and that with the others he could read five hours together; could read at night; could use his eyes all day without any pain, and considered himself entirely relieved."

His amendment was indeed rapid, his relief entire, and he now uses his eyes without thought of pain or trouble.

I could give, I think, no better example of the way in which a permanent unfelt defect is lifted into evil influence, by some brief but potent disturbance of the cerebral centres.

This case seems to me in all ways instructive, as illustrating every point of interest connected with eye headaches. There is a long lifetime of active work and constant use of the eyes, but no trouble until one night of intense anxiety gave rise to threatening but brief cerebral symptoms which at once seemed to make use of the eyes painful. It is also to be observed that the cerebral symptoms were such as to point rather to cerebral troubles than to the eyes as the cause of distress; and, lastly, the comparatively slight character of the optical defects which rose abruptly into competence for mischief, and the rapid relief from glasses, are all well worthy of consideration.

I must now, I think, have amply illustrated the fact that eye strain causes headache and worse disorders, and is often their unsuspected cause. Simple deficiency of power in one internal rectus muscle, if extreme, results in the patient being so utterly unable to overcome it as to give up the

effort, and allow the eye to roll out, contenting himself with clear monocular vision. The effort needed to overcome lesser weakness is a competent one, but ends in incessant exertion and fatigue. The accommodative effort needed in hypermetropia, especially with astigmatic trouble, is extreme, owing to the instinctive and never satisfied craving for distinct vision—and hence the source of fatigue. I presume that the strain made on the eye by these various forms of trouble in sight, is due largely to the fatigue which ever comes of the need to make volitional efforts to effect movements which, in ordinary use, are sensually guided, and are more or less in this view automatic. Besides which, the use of the eyes is so incessant that it is impossible for the victims, by any means save glasses, to put the eyes at rest; so that often the strain is nearly incessant.

Like other physicians who have not had the training of the ophthalmologist, I long found it difficult, in examining cases, to learn if they had or had not such eye defects as would necessitate resort to a more careful examination by the eye surgeon. The methods of learning if there be astigmatic or accommodative disorders were difficult to practise or troublesome, owing to the need for test-glasses and the like. Of late, however, since Dr. William Thomson gave us the little test-disks, which any one can learn to use, and which are alike simple and to be relied upon, I have usually been able with ease to know at least if any of these ocular disorders existed in a patient. For a clear account of this useful instrument I beg to refer to Dr. Thomson's papers (*Am. Journ. Med. Sciences*, Jan. and Oct. 1870); but I may add, that a piece of closely perforated bristol board or card may be made to answer as a qualitative test. If we pierce in a card, close together, half a dozen pin-holes, and view with one eye through these a tip of gas jet, or a small candle flame at least fifteen feet distant, if there be myopia or hypermetropia, the patient will see a number of points of light, while an emmetropic or normal eye will see but one; and if the disordered eye be astigmatic, the multiplied images will be spread out laterally if the defect be in the horizontal meridian, or will be at right angles to this if it be in the perpendicular meridian. With the disk of two apertures, one covered with red glass, it is easy, by Dr. Thomson's method, to learn if the trouble be myopic or hypermetropic, and even to know its degree. A low degree of hypermetropia may not be detected in persons under forty without the use of atropia, since the images may be fused by the power of accommodation, which must be paralyzed in these cases where an exhaustive diagnosis is required.

I believe that physicians who are out of reach of the resources of our great cities would find this cheap and simple little apparatus well worth learning how to use. Without it, or more complex means, no one can feel sure that in any case of headache the cause may not be in the organs of vision.

ART. V.—*On the Modification of the Anæsthetic Process by Hypodermic Injection of Narcotics*. By J. C. BERRY, M.D., of Dayton, Ohio.

IN the *Bavarian Medical Intelligence* for October, 1863, Nussbaum, the eminent Munich surgeon, published a paper on the maintenance of chloroform anæsthesia during several hours by means of hypodermic injections of narcotics. The mode of administration was alone new in this, the principle had been discovered before. Thus, in 1861, Pitha related a case in which, "after chloroforming the patient in vain [?], he induced twelve hours of complete and placid narcosis by injecting twenty grains of belladonna extract into the rectum."¹ Yet Nussbaum's plan was as much more practical as is the hypodermic mode of introduction of the remedy speedy and reliable in effect compared with the other. His first observation was on a female patient from whose neck he was extirpating a tumour. The operation had already lasted an hour and was not near its termination; fearing further prolongation of the administration of chloroform he gave, hypodermically, a grain of morphia. Not only was narcotism produced but the anæsthesia was maintained; incisions, the application of the actual cautery to check hemorrhage, the introduction of the sutures, caused no movement, and the patient slept on, and some twelve hours elapsed before she returned to consciousness.

Three other observations of the same kind were published at the same time. In one, the patient had previously received a grain of acetate of morphia hypodermically without narcotism; an injection (amount not stated, presumably the same), made during chloroform narcosis and while undergoing extirpation of the superior maxillary, produced a quiet sleep of eight hours' duration, during which pulse and respiration were regular. Injections of half a grain of morphia in a patient of fifty and a boy of seven, produced sleep respectively of five and six hours' duration.

Bernard also accidentally discovered the modifying influence of hypodermic injections of morphia upon chloroform anæsthesia while experimenting on animals. To a dog under chloroform, which showed signs of returning sensibility, he administered five centigrammes [gr. .77] of muriate of morphia, and saw immediately anæsthesia return after it had almost entirely disappeared.

The eminent French physiologist says that this occurred in the same week in which Nussbaum made his first observation on the human subject, and yet he gives the year as 1864.²

Immediately after the publication of Nussbaum's observations the Ver-

¹ Med. Times and Gazette, March 5, 1864.

² Leçons sur les Anæsthesiques et sur l'Asphyxie, par M. Claude Bernard, Paris, 1875, pp. 225-6.

'sailles Medical Society applied itself to the investigation of the subject, and the following are the conclusions arrived at :—¹

"1. That salts of morphia, in doses of five to ten centigrammes, injected alone produce a kind of intoxication which may go on to torpor, but do not give rise to insensibility, properly so-called. The effect is not durable, and in a few minutes the animal returns to its normal condition. 2. Salts of morphia injected during anæsthesia produced by chloroform possess the singular property of prolonging the duration of the anæsthesia in proportion to the amount of morphia employed. 3. That this property may be turned to use without danger in man when the duration of an operation gives rise to fears of continuing the anæsthesia by means of chloroform."

Beyond this, Nussbaum's plan seems to have attracted little attention and found few followers. Thus Eulenberg's recent work² on hypodermic medication, which seems to be exhaustive of the subject, its bibliography extending even to Australian medical journals, as well as to those of our own country, contains but one or two allusions to this plan of treatment, and but a brief notice of the author's own experience. Bardeleben's surgical clinic at Greifswald afforded him an opportunity of testing Nussbaum's plan in four cases, two resections of the inferior maxillary, a perineal restoration, and the extirpation of a cancerous testicle, the operation much prolonged on account of hemorrhage from a retracted spermatic artery.

"There was injected respectively three and two centigrammes of morphia [gr. .46 and .3]. A prolongation of the chloroform narcosis over several hours, as Nussbaum describes, was only attained in a single instance, while in the others at most only a transient and by no means certain effect was observed."

The difference between the dose given by Nussbaum and by Eulenberg cannot fail to attract attention, and will be the subject of further consideration.

Possibly Nussbaum's plan has been followed more frequently and more generally than would seem indicated by publications on the subject. To me it seemed one eminently beneficial in many respects, and from the time of its first appearance in our journals I have resorted to it whenever I have had an operation of sufficient gravity to seem to demand it, or one of such a character as to render the effects of an opiate afterwards of probable benefit to the patient. Thus, in such amputations as I have been called on to perform, in several cases of herniotomy, and in a few cases of ovariectomy which have fallen to my lot, I have always given hypodermically a dose of morphia varying from two- to three-fifths of a grain, and believe that my patients have been benefited in the prolonged anæsthesia, and by the relief of pain and the quiet sleep following the operation.

I am aware that there is wide difference of opinion as to the beneficial effect of opium after operations. Thus Peaslee³ says :—

¹ Med. Times and Gazette, May 28, 1864.

² Die hypodermatische Injection der Arzneimittel, von Dr. Albert Eulenberg, Dritte Auflage. Berlin, 1875.

³ Ovarian Tumours, p. 489.

"The hypodermic injection of morphia immediately after the operation [ovariotomy] adds much to the depressing effect of the operation, and should be, as a rule, discountenanced."

Mr. Humphrey says: "Immunity from pain is dearly purchased by the languor and enervation which often follow the opiate. As a general rule I prefer that my patient should run the risk of a sleepless night after an operation rather than incur the effects of a sedative."

Those who hold these views will not be likely to follow Nussbaum's plan; but my experience of its benefits has been such as to outweigh a very large amount of authority against it.

I presume that I should have continued indefinitely the hypodermic administration of morphia immediately before operations, had I not learned what I believe to be a far better plan, which is to administer the narcotic at a longer time before the operation, say from twenty-five to forty-five minutes. For a knowledge of this plan I am indebted to the work of Bernard already quoted, a work which contains all the information upon this subject which has yet met my eye, a work, too, so interesting and valuable in many respects, both therapeutically and physiologically, that it is surprising how little notice it has received from medical journals.

Bernard states, that, after the hypodermic injection of morphia preceding the administration of chloroform, the course of events is not the same, but some new and very interesting facts are developed. The most important of these are, the very much smaller amount of chloroform necessary to produce anæsthesia, and the more profound insensibility of the animal under the combined influence of the two agents. We quote from his lectures:—

"You see how admirable is the effect of this action of chloroform added to that of morphia. I know no other means of immobilizing animals in so complete a manner. This enables the physiologist to overcome one of the greatest difficulties he meets with in operating on living subjects; he has thus the means of rendering them inert while the phenomena of life still go on. The animals, as you see, are in a state of absolute resolution, their limbs are flaccid, and they can be placed in any position, they are like warm cadavers, and they can be kept in this state a long time, during half a day if we wish, a time abundantly ample for the longest operations." (pp. 227-8.)

Again, "You see in this dog how complete is the state of relaxation, of muscular relaxation, which is obtained by this addition of the effect of chloroform to that of morphia. By the aid of this means, as I have already said to you, the most difficult experiments can be easily executed. Thus, in this dog which is before you, we have been able to penetrate to the bottom of the mouth, and into the pharynx, to divide the lingual nerve at its place of emergence, which, in a dog in the normal state, or either simply chloroformed, or under the influence of morphia alone, it would be impossible to do." (p. 270.)

We must refer to the work itself for detail of the experiments. It may be well to give the views of so eminent an authority as M. Bernard as to the mode of operation of these powerful therapeutic agents when their effects are combined.

"First of all there is one thing to declare formally, that there is here simply superposition of two effects without either combination or antagonism properly speaking. The two effects, in being superposed, remain distinct, and neither

¹ Address in Surgery, British Medical Association, 1864.

is modified. Besides, I have never seen it otherwise in all the cases in which antagonism between medicines or poisons has been claimed to exist, for example, in the case of curare opposed to strychnia, atropia opposed to morphia, etc." (p. 266.)

It remains to present the experience which has been obtained of this plan of treatment in the human subject, and for this we can only quote from the same work. Since the first publication, in 1869, of the results obtained by him on animals, M. Bernard tells us, French surgeons have begun to apply the method in practice, and he gives in detail the experience of some who have tested it.

M. Guibert reported to the Academy of Sciences in 1872 (Seance 18 Mars), the results he had obtained. He noted two distinct states according to the dose employed, one of analgesia and one of anæsthesia, the former being "insensibility to pain, with conservation of intelligence, of consciousness, and of voluntary movement," and sufficing for the operations of minor surgery and for obstetrics. Fifteen of his observations are accouchements, and we fail to see any advantage in the preliminary use of the morphia, over what we daily observe in the use of chloroform alone. One case, however, must be excepted, and we give it as reported, hoping that the future will confirm the value of the procedure in such cases. It was a case of version "performed for a presentation of the trunk more than sixteen hours after escape of the waters, executed with the greatest facility in this analgesic state, while the patient continued to answer questions addressed to her and did not utter a single cry. The combined action of chloroform and morphia had completely abolished the contraction or retraction of the uterus, which, in these conditions, renders version so difficult for the accoucheurs and so painful to the mother."

MM. Labbé and Goujon reported, to the Academy of Sciences on the 26th of February, 1872, four observations of this mode of treatment. We copy two of them as examples, and they do not differ materially from the others:—

"On the 27th of January, M. Labbé, at La Pitié, performed a submalleolar amputation upon a young man. Twenty-five minutes before the operation, there was injected into the inner surface of the thigh two centigrammes [gr. .3] of muriate of morphia. The chloroform was given, and produced moderate excitement; at the end of seven minutes anæsthesia was complete, and prolonged a good while after the operation, which lasted seventeen minutes. The quantity of chloroform expended was twenty-eight grammes."

"A young woman about to undergo ovariectomy received hypodermically two centigrammes of muriate of morphia. The chloroform was administered twenty minutes afterwards. A light period of excitement was manifested, and the anæsthesia became complete at the end of six minutes. The operation lasted one hour and forty-five minutes, and the chloroform expended during this time was forty-eight grammes. During all this time the patient was in a state of complete resolution, and she awoke very calmly after the operation, saying that she had felt nothing and had then no pain."

The following are the conclusions of these gentlemen, drawn from their experience:—

"1. Anæsthesia can be produced in man, as M. Bernard has shown in animals, much more rapidly by combining the action of chloroform and morphia.

"2. That this anæsthesia is of longer duration and can be prolonged for a very considerable time with small doses of chloroform, and that from this fact, the risk of fatal accidents may be considerably diminished."

The most extensive series of observations are those by MM. Rigaud and Sarazin made at the hospital of Strasburg. A detailed report is given of fifteen operations, of various grades of severity. The amount of morphia used was small; in several of the cases five milligrammes only (gr. .077), in several one centigramme (gr. .15), in two only it amounted to a little over one-fifth of a grain. The conclusions of these gentlemen are also appended:—

"1. The doses of morphia do not need to be very large in order to be efficacious; but, then, the injection should precede the operation by at least forty minutes.

"2. If an operation is to be practised immediately, an injection of morphia will augment the period of excitement, and if the dose is tolerably large, accidents on the part of respiration may occur, as in Case XIV. Nevertheless, the period of excitement is short, resolution is rapidly obtained, and the awakening may take place completely and in a very short time.

"3. The association of morphia with chloroform is useful in operations of long duration, or in cases where prolonged anæsthesia is necessary.

"4. It is contra-indicated in such operations as require that the patient assist the surgeon, above all, in operations on the face, where there is risk of blood entering the air-passages.

"5. After operations from which anæsthesia has been obtained by this combination, less unpleasant effects [*moins des malaises*] are observed, and the patient enjoys a repose favourable for the result of the operation, and which may prevent many of the consecutive accidents of surgical operations."

The above reference to Case XIV. would prompt the inquiry, if it did not spontaneously arise, as to any increase of danger arising from this mode of treatment. In this case the patient was a man aged 53 years, of originally good constitution, but somewhat enfeebled; the operation, amputation of the leg; two injections were made of one centigramme and of five milligrammes of morphia; symptoms of embarrassed respiration manifested themselves during the anæsthetic process, with congested face and cyanosed lips; the tongue was drawn forward, and recovery soon took place. In Case XVII. there were more marked dangerous symptoms; one centigramme of morphia was given immediately before the operation; the patient was 62 years of age, a hard drinker, and of broken constitution; moreover, after examination showed marked signs of fatty degeneration of the heart. The latter, then, was a very bad subject for chloroform under any circumstances, and in the former the symptoms were such as chloroform produces alone. Eulenberg, however, publishes a fatal case, reported to him by Dr. Bartscher, which occurred in the hospital at Osnabruck. The patient was a badly nourished peasant, aged 58 years. After he was narcotized with three drachms of chloroform, one grain of acetate of morphia was injected into the upper arm. The operation, for

removal of fibrous polypus of the fauces by incision, was then proceeded with and completed. The patient awoke, was led back to his chamber, helped undress himself, and got into bed. "He slept quietly about an hour; as now stertorous respiration began, and the patient could not be wakened, I was called. He presented all the appearances of dying; he lay upon his back, with his mouth partly opened, pale, cold face, cold hands and feet, small, slow pulse, very low temperature." Death took place eleven hours afterwards by "paralysis of the lungs" in spite of all efforts at resuscitation, and the *post-mortem* showed no blood in the air-passages, nor gave any explanation of the fatal termination.

Surely this was a death from the narcotism of opium. The report does not mention the state of the pupils, nor give the rate of respiration; yet the time at which the bad symptoms began, their character, and the mode of death, all point out in one direction for an explanation of the death. Moreover, there is further evidence, we think, in the amount of morphia administered, and we indicated our intention of returning to this point. There can be, we think, no doubt that a grain of morphia administered hypodermically, unless in the case of patients already accustomed to the use of this narcotic, is too large a dose to be given without risk. The report of Nussbaum's original cases shows this undoubtedly in the length of time deep sleep continued after the operation, and despite the high authority, we cannot think any prudent practitioner would venture on half a grain to a boy seven years old!

My own experience of the injection immediately before or during anæsthesia can only be given in a general way. As before stated, I have resorted to it for a considerable number of operations during the past eight or ten years. The results have been satisfactory; I have seen no symptoms of danger, while in the prolonged anæsthesia, and the quiet and absence of pain afterwards, there has been ample proof of the value of the plan.

Too short a time has elapsed since Bernard's lectures appeared to afford much opportunity for testing his plan of administering the narcotic some time before the chloroform. I append two cases.

CASE I. Patient a healthy man, aged 58 years, right wrist traversed by circular saw, amputation at the joint. Twenty-five minutes before administering the anæsthetic, which consisted of the mixture of one part alcohol, two parts chloroform, three parts ether—the anæsthetic I invariably use except for children and in obstetrics—he received a hypodermic injection of eight minims of a mixture containing sixteen grains of morphia and half a grain of atropia to the ounce. He passed into the state of anæsthesia rather more slowly than usual, on account of shallow respiration, but there was no excitement; the anæsthesia once obtained was profound, he did not move or groan during the operation, his extreme quiet reminding me of what Bernard says of dogs. He awoke in due time, was quiet and comfortable, and had no vomiting. The amount of mixture expended was one and a half ounces.

CASE II. Patient aged 38, operation ovariectomy, double, weight of tumour removed 36 pounds. Twenty-eight minutes before anæsthetizing, an injection was made of twelve minims of the same mixture as above. As she was on the table, and just before administering the anæsthetic, another injection was given of six minims of a solution of atropia, one grain to the ounce. It is safe to count one minim as lost in these injections. She manifested somewhat more excitement than usual for a female while passing into the state of anæsthesia. The operation lasted one hour; during it the patient was extremely quiet, she once raised one hand, which was the only movement, and she did not groan. Her pulse kept up remarkably well, her capillary circulation as shown in her lips was excellent, and her condition during and after the operation excited the comment of medical gentlemen present, and contrasted with what they had ever seen under chloroform. After removal to bed, she complained of no pain, and enjoyed a quiet sleep. No vomiting. Recovery followed, but only after a protracted diarrhœa, probably septicæmic in character. The amount of anæsthetic mixture expended was eight ounces.

The atropia was administered in this case for an especial purpose, the maintenance of the circulation and the vital powers during a protracted operation; and to counteract the depressing effect of long-continued anæsthesia, and this, we believe, to be another modification of the anæsthetic process by hypodermic injection well worthy of attention. Especially will it prove beneficial when chloroform alone is used. Nothing is better established than the depressing effects of this great remedy upon the functions of the heart, while the powerful stimulating influence of atropia is among the more recent contributions of experimental physiology to medicine, which has not yet received a tithe of the attention it deserves, although the facts in regard to its action have been for some years before the profession, and emanate from very high authority. Harley,¹ after giving the details of experiments with it, says:—

“If we take the simplest view of its action, it is that of direct and powerful stimulation of the sympathetic nervous system, and it may be regarded as the only one. During the operation of medicinal doses the heart contracts with increased vigour, the arteries increase in tone and volume, the capillary system fully participates in this general excitation of the circulation, and a diffusion of warmth is felt throughout the body.”

Bartholow² bears the same testimony. Giving briefly the conclusions he arrived at, they were that atropia exerts a powerful stimulating effect on the heart, and produces a rise of temperature to the amount of a degree. It increases the activity of the organic nervous system, as shown by increased tonicity of the arterioles, increased action of the heart, and rise of bodily heat. He distinctly recommends its use hypodermically previous to the inhalation of chloroform, as a means of lessening the dangers of paralysis of the heart and of respiration.

It is carefully pointed out by Harley that, if the dose be large, exhaus-

¹ The Old Vegetable Neurotic, 1869.

² Prize Essay: Trans. Amer. Med. Assoc., 1869.

tion rapidly follows increased action, and, therefore, to obtain the stimulating effects of the remedy but a small dose should be used, say from the one ninety-sixth to the one forty-eighth of a grain.

ART. VI.—*On the Medical and Dietetic Treatment best adapted to the Physical Restoration of Confirmed Inebriates.* By ROBERT P. HARRIS, M.D., Attending Physician to the Franklin Reformatory Home, Philadelphia.

WE do not propose in this article to enter upon the treatment of any of the serious chronic organic diseases which result from the long-continued use of alcoholic stimulants, but simply those direct conditions of disease which we are all liable to be called upon at any time to remedy in the debauchee, made sick by over-indulgence, whether of a few days, weeks, or months; or it may be of a much longer period. Few drunkards are regularly periodical, or continuously habitual; most of those we are called upon to treat being alternately moderate and excessive; or abstinent, and again immoderate.

The diseased conditions referred to are vomiting, inordinate thirst, diarrhoea, hemorrhage from the rectum, epileptic convulsions, nervous tremors, morbid wakefulness, delusions of sight or hearing, or both, and maniacal attacks. Physicians in both private and public practice are called upon to administer to their relief, and, if possible, restore them to sound health—often only, it is true, that they may be ready in a few days or weeks to resume their old habits—a very unthankful position, but one which may occasionally enable us not only to save the life of the patient, but put him in a position to reform his habits, and become a useful member of society, instead of being a curse to it and his family.

The opinion was long held by physicians, and still is by many whose experience has not led them to change their views and practice, that there is very great danger to the inebriate in suddenly cutting off all his customary stimulus, and that mania is almost sure to follow such a practice when the party has been drinking steadily and largely for a long time. Hence, to avoid this presumed danger, the system known as the “*tapering off*” was adopted, and is still adhered to by many; that is, to gradually diminish the amount of stimulus, day after day, until it is believed safe to stop it altogether. We have faithfully tried this plan, as well as the “*sudden stoppage system*,” and are firmly convinced that the latter has every advantage over the former, and especially in the cases where, according to the old theory, there should be the greatest risk.

During the last three and a half years we have had under our care at the Franklin Reformatory Home for Inebriates more than five hundred

men who were confirmed drunkards—a few of them being periodical, but most of them what are called *habitual*. With but a very small exceptional fraction, these men drank whiskey, and on an average of one and a half pints daily. Some drank as high as half a gallon for a short period, and a few strong subjects were able to consume a quart regularly every day for a year or more. With the great majority of men the period of a debauch is limited by the ability of the stomach to endure the gradual production of alcoholic intolerance, amounting finally to absolute rejection of all fluids and solids from this viscus, accompanied in many cases by an exhausting diarrhœa, and, in a few, by epileptic convulsions, or hemorrhage from the rectum. This condition finally forces the party to break off his habit for the time, and, in some instances, to go to bed and seek medical advice.

We find such patients weak, nervous, excessively thirsty, inclined to emesis under the least provocation, and in many cases reduced in flesh considerably. Such subjects, and especially when the habit has been indulged in several months prior to the time when medical aid is summoned, are, in our experience, those most liable to terminate in maniacal attacks; and these sometimes of an asthenic type, with a scarcely perceptible pulse, and tending, unless arrested, to coma and death. In such cases there is certainly no question as to the propriety or impropriety of the tapering system, for nature herself decides the matter in the fact that the stomach rebels against almost everything, and especially stimulants, water, and solid diet.

The indications are plain in these cases. We are to settle the stomach, quiet nervousness, nourish the patient, and induce sleep, all of which must be accomplished, if possible (and the instances where they cannot are exceptional), within twenty-four, or, at the most, forty-eight hours. If the patient has diarrhœa, or hemorrhage from the rectum, these must also be checked; and this may be said of any other condition of an exhausting character. The danger of mania arises from the fact that the party has been over-stimulated, while at the same time his nutrition has not been properly kept up.

A careful comparison of cases satisfies us that the reason why many men who drink alcoholic liquors largely for years escape maniacal attacks, whilst others in less time, and upon a smaller quantity, are seized with them, is, that the former are seldom, if ever, troubled with attacks of vomiting, and keep up their nutrition to an average degree, whilst the latter gradually lose their appetite, until finally they present themselves for medical treatment after an entire abstinence from food of three or four days.

Some inebriates, after abstaining for some weeks or months, and then returning to their habit, commence with such excess that the appetite fails at once, and health and strength also in a few days. We have seen

the pulse, in one instance, brought down to forty beats per minute in three days; and flesh reduced in another case $10\frac{1}{2}$ pounds in six; the latter party having been able to eat only about five meals in this period. This man was in sound health, and had not been drinking for six months before the debauch in question, simply because he was a prisoner in the House of Correction, and could not get it. On the day of his discharge he weighed $151\frac{1}{2}$ pounds, and when I weighed him, six days later, he was reduced to 141. We have heard much of the value of alcohol as food, of its preventing the waste of tissues, etc.; but this case does not argue well for its ability as a nutrient either directly or indirectly. We have frequently added from twenty to forty pounds to the weight of an inebriate in a short time after he had ceased to use whiskey; and have even seen this amount of improvement in two cases of incipient phthisis, with frequent hemorrhages, one of whom now weighs 180 pounds, although he still coughs a little. A gain of nine pounds in a week is the best we have upon reliable record, although more than this has been claimed.

It is not to be wondered at that cases of physical depression following the use of alcohol, and of defective nutrition due to failure of appetite, should become affected with mania-a-potu unless very carefully treated in a way to restore physical strength at as early a date as possible. The management of such cases is somewhat more difficult in private practice than in a public institution provided with strong rooms; but the medical treatment should be the same in either case. If there is vomiting, the patient is usually much benefited by the use of lime-water and milk, one teaspoonful of the former to two or three of the latter, with a small piece of ice given at intervals of fifteen minutes for about two hours. If this fails, then a large mustard-plaster should be applied over the abdomen, and the remedy just named repeated. If the irritability continues, opium is often of service, or bromide of sodium in combination with bicarbonate of soda, 15 grains of the former to 10 of the latter, in spearmint water. As soon as the stomach will bear it, beef-tea should be given at short intervals, commencing with a tablespoonful, and increasing gradually to a teacupful at a time. This should be prepared by the warm maceration process of Liebig, and seasoned with black pepper, salt, and a small pinch of ground cloves. Chicken-water will sometimes be borne more readily than the beef-tea, and may be given as an intermediate step, or in preparation for the latter. From fluids we may soon pass to solids, such as eggs, toast, mutton chops, etc.; for it is not uncommon for a patient to vomit in the morning, eat a little at dinner, and quite ravenously at tea.

Bromide of potassium is next to be employed as a sedative and soporific, and especially if there be any danger of mania-a-potu. In these cases we have generally given 20 grains in a tablespoonful of spearmint water every hour or two, according to urgency; and have in one or two instances of mania administered as high as 1200 grains in three days. This remedy

not only induces sound, healthful, restoring sleep—often wonderful in its results—but in some subjects removes all craving for alcoholic stimulants after a few doses have been taken. It also, in some cases, helps to relieve the irritability of stomach, and no doubt diminishes its hyperæmic condition by its action upon the capillary circulation. The bromide of sodium will perhaps prove a better remedy when it comes to be more fully tested. It is fifty per cent. more soluble, is more purely saline to the taste, and entirely free from pungency. Although a fluidrachm of water will dissolve 40 grains of bromide of potassium, and 60 of bromide of sodium, we believe it much better to administer both salts in weak solution, making the dose a tablespoonful, and giving the patient but very little additional water in the way of drink, except what he gets in his beef-tea and other diet. The equivalent of bromine in the latter salt reduces the dose about one-sixth. The bromide of lithium is much stronger as a hypnotic than either salt, being nearly one-half more active than the bromide of potassium; its high price prevents it as yet coming into more general use. The bromide of ammonium we have also used, especially in rheumatic and gouty cases; but its pungent ammoniacal taste renders it more unpalatable than either of the other salts.

Sulphate of morphia is a good adjuvant to the salts of bromine as a soporific where these fail in producing an early effect, and is best given at night, the dose being one-quarter of a grain, repeated three or four times at intervals of an hour. Tannin generally soon arrests the diarrhoea. If there is pain, opium should be added; and if the disease should prove obstinate after a few trials, acetate of lead will be found a more effective astringent. *The object of treatment* should be to produce an improvement in the shortest possible time, so that food may be taken safely, and the patient receive the great benefit that it and sleep are capable of exerting in his case.

to supply the real demands of the system, and the craving for it often leaves in from twenty-four to forty-eight hours. A simple statement of the reasons for withholding water, we have always found to secure the co-operation of the patient when in a condition to listen to reason.

Hyperæsthesia of the stomach amounts to a curious feature in the convalescent period with some patients, and remains for several days after the stage of intolerance evinced by emesis has passed, and the parties are enabled to eat with a good appetite. In these cases the patient experiences a feeling of tenderness almost amounting to pain, at the entrance of each mouthful into the stomach, and compares his sensations to those which would be felt by the dropping of a foreign body upon a raw surface. It is difficult to locate the seat of disease, whether in the cardiac orifice, or greater curvature, but the feeling in the few cases we have seen, was attributed to the latter. In the parties thus affected the stage of nausea had passed by for several days, and the appetite was excellent; in fact, too large for the assimilative powers. Hence in such subjects there is a great necessity of cautioning the party to check the indulgence of his appetite to avoid dyspeptic troubles, until he feels that the sensitiveness of the stomach has subsided. We have had no occasion to resort to any special medication.

Hemorrhage from the bowels in inebriates, although sometimes from the small intestines, is almost always from the rectum, and follows the act of defecation, the loss in some cases being considerable. This should be arrested as soon as possible, or the exhaustion of system may determine an attack of mania; and may usually be done by using a small hard-rubber syringe containing one, two, or three drachms of a ten-grain solution of persulphate of iron, immediately after each evacuation of the bowels. Two or three repetitions of this enema will, in many cases, arrest the hemorrhagic tendency. More than ten grains will produce too much smarting, and even this is pretty severe the first time it is used. By persevering in this we have been enabled to cure some cases of very long standing.

The *convulsions of drunkards*, although in some instances ushering in an attack of cerebral congestion ending in coma and death, are, as a general rule, eclamptic in character, and due to reflex disturbance from the alimentary canal, the exciting cause being the presence of a large quantity of alcoholic drink recently taken. About fifteen per cent. of inebriates appear to be affected at some time in this way, and we have seen as many as nine attacks in the same subject from one day's excessive debauch. Such patients usually recover readily upon the elimination of the alcohol taken, and may sometimes be benefited by bromide of sodium or potassium in a large dose.

In treating the subject of *mania in drunkards*, it will not be necessary for us to define and classify the different types of the disease, for, as all

only require modifications of the same line of treatment, so we shall put them all under the general head of *mania-à-potu*. If the remedies used, fail to prevent an attack of mania, or if the disease, which is oftener the case, is in its incipency when we are called in, and we do not succeed in arresting its development, then our next endeavour should be to restore the patient to sound reason, which in the great majority of cases can be effected in from two to four days. We have in a few instances had parties as long as six, but they were subjects broken down by years of dissipation. Very much the same system of treatment is required in the disease itself, that we have recommended for preventing its approach: Bromide of sodium or potassium every hour; sulphate of morphia in quarter grain, doses repeated two, three, or four times at night as may be required; good substantial diet, with beef-tea between meals; and in very feeble sleepless subjects hydrate of chloral as a soporific and stimulant in thirty grain doses, at intervals of an hour, until from 90 to 120 grains are taken. We have never had occasion to give more than the latter dose, although we have known the repetition at shorter intervals to be carried up to 300 grains with safety. In the use of this drug it is highly important to secure a pure article, such as that made by Schering of Berlin, or Squibb of New York, in order that the risks in its employment may be diminished to the lowest possible degree.

Secrecy in prescription is all-important in the treatment of inebriates, who unfortunately receive, as a general rule, entirely too much information about drugs. As one-fifth of our drunkards are in the habit of resorting to their use, as well as alcoholic stimulants, and especially tincture of valerian, valerianate of ammonia, bromide of potassium, hydrate of chloral, and Hoffmann's anodyne, it is better to avoid giving them any additional information to be made an improper use of. There are chloral drunkards who do not touch whiskey, and there are whiskey drinkers who constantly resort to bromide of potassium under the impression that it is an antidote to the poisonous effects of alcohol, even taking the stimulant and drug at the same time. Drug clerks, from their knowledge and facilities for obtaining it, are particularly inclined, if they have any passion for stimulants, to make use of chloral, and sometimes to a large extent, as we know by having been consulted by them privately.

We have entirely abandoned the use of all medicinal tinctures in the treatment of inebriates, as tending to keep alive a desire for drink; and have ceased to use hop-tea, wormwood-tea, capsicum, and highly seasoned soups, which we largely used at one time, because we have found that patients do much better without them, and they are almost always associated in their minds with the use of beer or spirits. Inebriates use pepper, spices, horseradish, and condiment to an almost incredible degree when they can get them; and in State asylums where there is always a number who have no desire for permanent reformation, one of their secret sub-

stitutes for whiskey is Cayenne pepper stirred in milk. It would, therefore, be of very little value to use a few grains of capsicum upon a patient accustomed to consume large quantities of fiery spices.

In maniacal attacks of a marked asthenic type, where the pulse is like a thread, and scarcely perceptible, we formerly resorted to the use of alcohol as a stimulant, using it with milk, at short intervals, and in small quantities, for a few hours, with marked benefit in some almost hopeless cases; but for a long time we have used chloral as a substitute, and with better effect, as it is both stimulant and hypnotic. Some patients will sleep and eat quite well, and wake up one, two, or three mornings, each time improving, but still a little deranged. Such cases simply require time and nourishment, as they have been mainly suffering from exhaustion. We will also occasionally find a case of mania-à-potu terminating in either a fixed insanity, or one of a temporary character and very mild type. The latter form we have seen but twice, and it was pleasant to mark the daily effect upon the intelligence, of fresh air, exercise, and a generous diet. In such cases the perfect restoration of mind comes by slow degrees.

Where there is great restlessness, sleep is often delayed in mania-à-potu by the constant exercise of the patient upon his feet, and where the remedies appear to fail for this reason, we have frequently succeeded by fastening the party in bed with wrist and ankle straps until in a profound slumber. In most of such cases the patient sleeps well, and often awakes almost fully restored.

Sleep and food are really the main restoratives in our treatment, and the use of remedies is to induce the one, and enable the party to take the other in liberal measure. The fact that a convalescent inebriate possesses generally a marvellous appetite, rapidly gains flesh in most instances, and continues unusually hungry at meal times for several weeks, shows how important and valuable food is in his case, and how great is the demand for it, after starving the system on alcohol.

There are much greater difficulties, as we know by experience, in carrying out the system of treatment proposed, in private practice than in an institution where the patient can be locked up and controlled. This is particularly the case with regard to the use of tobacco, and the drinking of water. As 94 per cent. of our inebriates use tobacco, it is no easy matter to keep them without it even for a few days. If it takes on the average with us but three days to prepare our patients to have the liberty of the house, and one week before they can be trusted to leave the building, then it should not in private practice require the time which appears to be usually taken, to restore an inebriate to a state of comparative health. When we hear a patient declare that he was as well with us in three days, as he was at home in fifteen, under the care of two physicians of acknowledged ability, there must be something in our management beyond the mere advantage of a better control; and this we attribute to the depriva-

tion of tobacco; the use of very little water; the quiet seclusion enforced; and the entire absence of all alcoholic stimulants and substitutes for them, rather than to any special difference in the medicinal remedies employed.

It is impossible to treat inebriates by any routine system, as their cases vary as much as their respective peculiarities of mind and character. All we can do is to establish certain principles of treatment, and then manage each case according to the peculiar conditions which present themselves. We do not propose to make an inebriate perfectly sound and well in all respects in a week. Many do claim that they feel so, and it is remarkable in view of their former habits how much changed they become in a few days; but it stands to reason that the perfect integrity of the nervous system can only be recovered, after the trials it has endured, by a slow and gradual process of restoration, occupying weeks or months according to the peculiarities of each individual case. When we contrast our success of to-day in the treatment of mania-à-potu with what it was twenty years ago when stimulants and opium were the chief remedies, and when we sometimes met with cases in which both were contra-indicated by the condition of the brain, we cannot be too thankful that chemical experiment and clinical research have given us in the bromides, and hydrate of chloral such active agents, and especially the former, and discovered their value in the class of cases which has been the subject of this paper. We do not think there is any diseased condition of system in which bromide of potassium and sodium have such a marked influence for good, as in that which results directly from the poisonous effect of alcohol. But it is a mistake to rely too much upon them, and thus perhaps lose sight of the great importance of a proper supporting treatment. After the thirst for water subsides, there is no drink better adapted to remove any craving that may remain for alcohol than milk, and this is often resorted to by our walking cases, of their own option. The various minor sequelæ of inebriety must be treated with quinia, iron, etc., according to their respective characters, but no tinctures or elixirs should be employed in any case. Renal disorders are quite common, but seldom serious or persistent, and yield readily to treatment based upon analysis, as soon as the system is properly restored by the effects of nutritious diet.

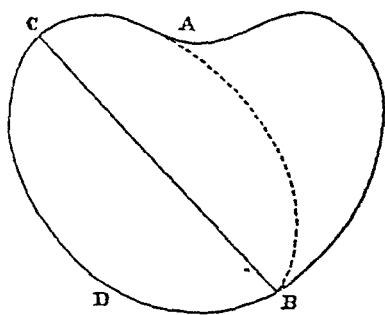
ART. VII.—*A Study of the Female Pelvis.* By H. G. LANDIS, A.M., M.D., of Niles, Ohio. (With four wood-cuts.)

THE motion of the foetal head through the pelvis is generally spoken of as a spiral movement. The true cause of this does not seem to be so thoroughly recognized, although the general mechanical principles which govern it are correctly laid down in most text-books. Greater simplicity is still desirable, which the following proposition and deduction will in part furnish, if correct.

As at present studied, the pelvis is a canal of irregular shape. If we can by analysis resolve it into regular elements, we shall have made a great step towards simplifying the subject; to which end this proposition is laid down. The female pelvis is essentially a duplex spiral canal; *i. e.*, it consists of two canals having each a slightly spiral course, which, partially separate at their beginning, are merged into one about the level of the ischiatic spines. Transverse sections of these canals show an elliptical form. The superior strait is said by Hodge to be bounded by the inner margin of the tuberosity of the pubes on either side, the spinous process, the linea ileopectinea, the inner margin of the ala of the sacrum, and the sacral promontory. Now, no plane surface can be made to pass through these points. For, as we may readily observe, the inner margins of the sacral alæ, when prolonged forward into the promontory, intersect in an angle of at least 15° , and the promontory is above the level of any two similar points taken on opposite sides of the brim. If a rule be held so that the extremities reach from one linea ileopectinea to the other, and another be extended from the promontory to the pubes, there will be found an interval between the planes of these lines of not less than three-fourths of an inch. But if we carry a plane through the points given above, only on one side, and prolong the bounding by an imaginary curved line, we shall have an elliptical plane which shall truthfully represent one side or element of the pelvic brim. And the same procedure on the opposite side will complete the survey.

The superior strait, therefore, consists of two distinct planes which intersect one another and have elliptical boundaries; as will be better shown by a diagram. Here (Fig. 1) is an outline of the pelvic brim, carefully reduced. The diameters of the original are—transverse $5\frac{3}{4}$ inches, oblique $5\frac{1}{2}$ inches, conjugate $4\frac{1}{4}$ inches. If we draw a curved line from A to B, it will complete an ellipse A D, and by drawing another from A to C, we should have another ellipse. The long diameter of either ellipse extends from the sacro-iliac symphysis to a point above the obturator foramen, which happens to be the oblique diameter as given by Meadows, though not the one usually so regarded. The diameter B C is less than the received oblique diameter by about a fourth of an inch, but at a trifle below the plane of the strait this difference is equalized. These ellipses are of similar shape to the foetal head, and are the planes of the entrances to the two canals. It is obvious that these figures are geometrically similar. For convenience, therefore, we will speak of but one, *viz.*, the left. Let a sheet of paper be cut so as to fit this ellipse, and, turning it through an arc of 45° to the

Fig. 1.



right, let it be placed in the plane of the inferior strait. There will be found a striking correspondence. The chief difference will be in the short diameter, which is widened by the outward flare of the ischial tuberosities. Here then the canals merge, and the arc of 15° is the measure of the spirality of the course. These facts are patent to the eye.

To complete the description, sections of pelvic casts are necessary. These are difficult to make, and when made require considerable trimming owing to the various apertures of the pelvis. There is danger of carrying this to too great an extent. To show the spirality of the intervening canal, I will, therefore, mainly rely on sections made for a different purpose, and which are delineated in Plate III., Figs. 19, 20, 21, of Hodge's great work, to which the reader is referred, and from which I take these diagrammatic representations of this fact—that the chords of the lateral inclined planes form a constantly lessening angle with the plane of the conjugate diameter as they descend. Figs. 2, 3, and 4 represent the chords of the lateral inclined planes at the first, second, and third parallels respectively. As the whole spirality is only through one-eighth of a circle, and the depth of the anterior portion is so slight, we would not expect to find this fact in a

Fig. 2.

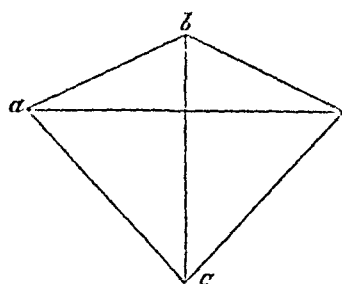


Fig. 3.

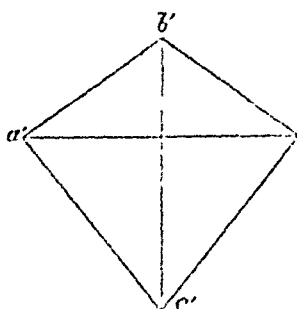
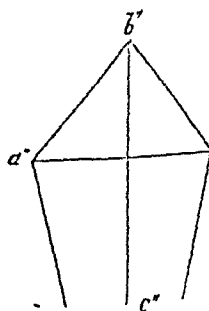


Fig. 4.



marked degree in the antero-lateral planes, but the posterior planes, governing a course of much greater length, do show it very plainly, as may be seen by measuring the angles. This diminution of the angle continues until, as we have seen, the long diameter of the elliptical section has become coincident with the conjugate diameter of the inferior strait. It is difficult to demonstrate this continued spirality by any other means. In a view of a cast of the bony pelvis, the aspect is confused from the interfusion of the canals and the raggedness of the cast due to the incompleteness of the bony framework. This may be partially avoided by closing the sacro-sciatic notch by pasting a piece of paper across it before making the cast. A photographic profile will then show very well the separate direction of the canals and their fusion below the ischiatic spines.

So far we have seen nothing which would conflict with existing views of the mechanism of labour; for it is evident that all parts of the spirals are

not equally efficient mechanical factors in determining the direction of the passing head. The point of junction is the most significant, and the ischial spines are truly the "keys of the pelvis." A consideration of the axes of the pelvis will, however, bring us upon new ground. As already stated, the superior planes of these canals make, with the assumed and artificial plane of the superior strait, angles of about 15° . Their axes have, therefore, a similar inclination to the axis of that strait; which inclination becomes less until at the inferior strait there is but one axis. Does the head then enter the pelvis with its bi-parietal diameter corresponding to the superior plane of its respective canal, and therefore obliquely to the plane of the superior strait? So Naegele taught, and so I believe, but only so far, for there is abundant evidence that from this point, the bi-parietal diameter is oblique to the real planes of the spiral, and synclitic with the artificial parallel planes. This may be, to a great extent, explained by observing the greater resistance the head meets with anteriorly.

In a left occipito-anterior position the left parietal boss is comparatively unobstructed in its descent, while the resistance to the right boss is considerable. Thus the tendency is to depress the left side of the head, which, opposing the original obliquity in the opposite direction, brings about a synclitism to the artificial parallel planes. The direction of the head in the upper part of its course is downwards, backwards, and slightly inwards, following the spiral axis until at or near the inferior strait it ceases to be spiral. This lateral movement inwards is naturally obscured by the simultaneous rotation of the head and consequent difficulty of determining the axial motion, but is sufficiently obvious, when looking at the whole pelvis, we see the marked difference between the transverse diameters of the superior and inferior straits. The so-called axis of the superior strait and of the whole upper pelvis is therefore artificial and useless, having no relation to the course of the head.

The importance of recognizing this fact is evident in the use of the forceps. In making traction with these instruments I have frequently noticed the fact of the lateral movement of the head, and that traction in the direct axis of the whole brim is often insufficient until supplemented by traction in the real axis of the canal in which the head is placed. This clinical fact probably suggested the common advice of obstetrical teachers to combine with traction a to-and-fro lateral movement. But it is with reference to the complete adaptation of the pelvis to the foetus that its double character is most plainly seen to be both ingenious and necessary. The long diameter of the child's shoulders is at a right angle with the antero-posterior diameter of its head, and the long diameters of these canals at their origin are nearly at a similar angle to each other. It is therefore necessary that there should be two canals until the head has reached the more spacious region below the inferior strait. The economy of room in their union is a

perfect adaptation of means to an end. Furthermore, by this contrivance the facilities for the passage of the head in a favourable or occipito-anterior position are greatly increased. If the body of the child be so held in the womb that its back is to the mother's left side, the head may enter either canal; the left canal with the occiput anteriorly, or the right with the occiput posteriorly. If its back be towards the mother's right side, the positions are reversed. If its back be toward the mother's abdomen, it must of necessity take an occipito-anterior position, and in one event only, when the child's back is towards the mother's back, there is no escape from an occipito-posterior position. It is evident that, except in the latter instance, the rotation of an occipito-posterior position at the brim into the opposite canal would change it into an anterior position. The mechanism of these changes does not properly come within the scope of this study, and must be for the present dismissed. It is, then, not without reason that the tendency to diminish the number of normal cranial positions has grown with an increasing knowledge of the pelvic anatomy. Leishmann recognizes but four positions, a view which receives further warrant from this standpoint.

NILES, OHIO, Nov. 1875.

ART. VIII.—*On the Surgical Anatomy of the Tibio-Tarsal Articulation, with special regard to Amputations at this joint, as deduced from 80 consecutive dissections.* By JOHN A. WYETH, M.D., Assistant to Chair of Anatomy, Bellevue Hospital Medical College,¹ New York. (With a wood-cut.)

IN both the amputations at the *tibio-tarsal* articulation (Syme's and Pirogoff's), surgeons agree that the perfect success of the operation depends upon the vitality, *i. e.*, the non-interference with the blood-supply of the inferior or calcanean flap.

Descriptive and surgical anatomists and operative surgeons agree, with remarkable unanimity, that the integrity of this flap is dependent upon its blood supply, partly from the *anterior and posterior peroneal* arteries on the outer side, but principally from the *calcanean* branches of the *posterior tibial* on the inner side of the ankle-joint.

In reference to this, Gross says: "Care should be taken not to wound the *posterior tibial* prior to its separation into its *plantar* branches, otherwise sloughing of the soft parts might ensue from deficient nourish-

¹ This Essay was awarded the annual prize of One Hundred Dollars, offered by Prof. James R. Wool, of New York City, to the Alumni of the Bellevue Hospital Medical College, for "the best essay on any subject connected with Surgical Pathology or Operative Surgery." (Feb. 1876.)

ment;" while Valentine Mott, in his edition of *Velpéau's Surgery* (quoting from Syme), uses almost the same language: "Both incisions should be continuous, and exactly opposite to each other. Care should be taken not to cut the *posterior tibial* before it divides into the *plantars*, as in two instances when this happened (to Mr. Syme) there was partial sloughing of the flap."

Erichsen says "unless care be taken to cut the *plantar arteries* long, the flap will be insufficiently supplied with blood, and sloughing, especially of its outer angle, will be likely to occur;" and Hamilton, in the same connection, writes: "The operator must not wound the *posterior tibial* before it has given off the *internal calcanean* branches. *Division of the posterior tibial at a point lower than this does not, as has been affirmed, endanger the vitality of the flap, as it receives no arterial supply from a lower source.*"¹

Holmes is of the opinion that "the integrity of the *posterior tibial*, though desirable, is by no means essential, provided the rest of the subcutaneous tissue has been left uninjured."²

Apropos to the generally accepted idea of the origin of this principal blood supply, the following quotations are given:—

"The *internal calcanean* consist of several large branches, which arise from the *posterior tibial* just before its division."—Gray.

Quain, while mentioning these vessels in his text only in a general way, gives them specially in his diagrams as branches from the *posterior tibial*, anastomosing with branches of the *posterior peroneal*.

"The *internal calcanean* branches, three or four in number, proceed from the *posterior tibial* artery immediately before its division."—Wilson.

"The *calcanean arteries* are two or three branches from the lower part of the *posterior tibial*."—Leidy.

"Under the arch of the calcaneum the *posterior tibial* gives origin, 1st, to branches distributed to the periosteum, to the adductor (?) of the great toe, the short flexor of the toes, and to the superficial structures; and 2d, to other branches of less calibre, which mount the inner border of the foot to anastomose with descending branches of the *internal malleolar* branch of the *anterior tibial*."³

¹ The italics are the writer's, not Prof. Hamilton's.

² Laying no claim to personal experience, the author cannot understand how it would be possible to dissect out a bone so full of indentations and rough eminences, so covered with the insertions and origins of ligaments and muscles, and sheaths through which tendons play, and leave "the subcutaneous tissue uninjured." There are no less than thirteen muscles in relation to this dissection, to say nothing of ligaments.

³ Sous le vûte du calcaneum la tibiaie postérieure donne naissance; 1^o, a des rameaux qui se distribuent au périoste, au muscle adducteur du gros orteil, au court fléchisseur commun des orteil, et aux téguments; 2^o a d'autres rameaux

Hyrtl mentions the operation of amputation at the ankle-joint, but does not consider the surgical anatomy relating to this procedure.

I assert without equivocation that the arterial supply to the calcanean region, as given above, is not correct in the main; and that the operative surgery at the ankle-joint, based upon the idea that the arterial supply to the calcanean flap is derived from the posterior tibial, is unsafe.

Having failed to find this distribution, as given in the text-books some years ago, I determined to investigate this matter thoroughly, and to that end made 80 consecutive dissections of this region, with all requisite care, the result of which is given in the table and *résumé* appended to this essay.

In 72 of 80 cases the *posterior tibial* bifurcated into its *plantar* branches on a line between the lower border of the internal malleolus and the middle or centre of the heel's convexity. In four of the remaining cases the separation occurred one-fourth of an inch, and in the other four cases one-half an inch *below* this line M N (see diagram). Any variations in the point of division tend, in all cases, toward the line of incision in amputations in this region.

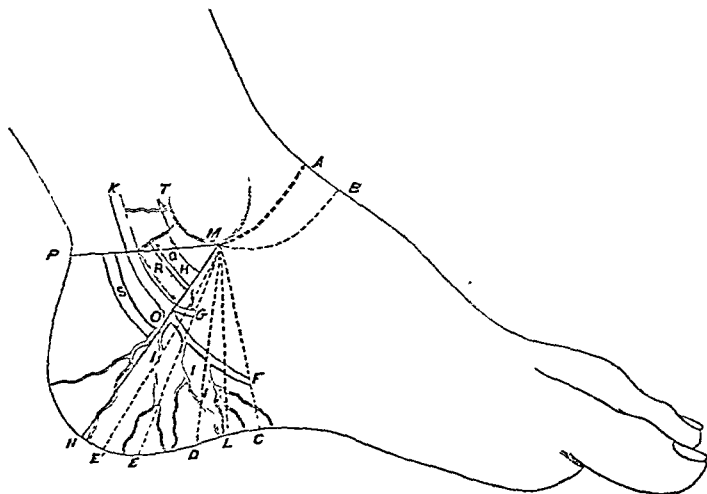


DIAGRAM SHOWING THE ARTERIAL SUPPLY TO THE CALCANEAN REGION, ON THE TIBIAL SIDE OF THE FOOT—(DRAWN BY THE AUTHOR, FROM THE AVERAGE OF 80 DISSECTIONS).—M. Internal malleolus. P M C N. Tibio-tarsal quadrilateral, the surgical region of this articulation. K. Posterior tibial artery. O. Its point of bifurcation into G. Internal plantar, and F. External plantar artery. I I I. Calcanean branches of external plantar. T. Articular branches from posterior-tibial. H. Articular branch from internal plantar. Q. Tendon of tibialis posterior muscle. R. Tendon of flexor longus digitorum. S. Tendon of flexor longus pollicis. M C. The line of incision of Gross. M L, M D, M E, M E'. Lines of incision showing that the nearer the incision approaches the heel, the more danger is incurred of cutting off the principal blood supply to the calcanean flap in amputation. M N. Line crossing the usual point of bifurcation of the posterior-tibial. M A, M B. Anterior incision.

d'un moindre calibre qui remontent sur le bord interne du pied pour s'anastomoser avec des rameaux descendants de la malléolaire interne, branche de la tibiale antérieure.—Sappey.

In 38 out of 80 dissections (*almost one-half*) there was not a single *calcanean artery* derived from the *posterior tibial* (K O, see diagram). So it must follow that any line of incision that approximates the terminal bifurcation of this vessel will, in a great many cases, endanger the blood supply, and consequently the success of the operation.

I cannot think that the exceptional cases in which good recoveries have resulted after division of this vessel above or at its bifurcation are arguments of any weight in favour of the incision "well back toward the heel," when compared with the fact that, in such a great proportion of cases, there is no blood supply above this point to the inner side of the flap, and that in some recorded cases where this accident has happened sloughing occurred.

From the standpoint of surgical anatomy, the incision recommended and practised by Prof. Gross, and represented in the annexed diagram by the line M C, is the most rational, since it is furthest removed from the most constant blood supply to this inferior flap, viz., the *calcanean branches of the external plantar artery*.

In 80 cases 51 calcanean branches were derived above the bifurcation.

In 80 cases 18 were derived opposite this point.

While out of 80 cases the number of calcanean branches derived from the *external plantar artery*, and distributed to the posterior or calcanean flap, safely within the line of incision of Gross (M C) given above, was 221, or more than three times in number, and carrying, without the least exaggeration, twice the volume of blood, of those derived opposite to and above the bifurcation.

Erichsen in his text says: "It is of importance that the incision across the heel should be carried well back over its point. Unless this be done, a large cup-shaped cavity will be left, in which blood and pus will accumulate, and retard the cicatrization of the stump. The principal point to be attended to, however, is that the *plantar arteries* be cut long."

These two propositions I hold as anatomically incompatible. The arteries will be cut short, *dangerously short*, if the incision is carried "well back over the point of the heel," while the great danger of retardation of healing on account of retained septic matter might be obviated by leaving the wound open for drainage at its most dependent part, or cutting a drainage-hole in the under surface of this cup-shaped flap, as is recommended by surgeons of experience.

In fact, strict attention to cleanliness should render the collection and absorption of septic matter impossible.

Hamilton, agreeing with Erichsen, perhaps a little more emphatic in his method of expressing it, says: "The lines of this second incision ought not to fall vertically from the malleoli, that is, not at right angles with the sole of the foot, as this would give a redundancy of flap; it would also increase the danger of sloughing, etc. . . . It is better

to carry the lines of incision from the two malleoli a little backwards, so that the knife will cross the bottom of the foot about an inch and a half further back; and in the case of an unusually long heel it will be proper to carry the incision backwards two inches." And in the same connection as quoted before, he adds: "The operator must not wound the *posterior tibial* artery before it has given off the *internal calcanean* branches which supply the cellulo-adipose tissue and integument composing the posterior flap. Division of the *posterior tibial* at a point lower than this does not, as has been affirmed, endanger the vitality of the flap, as it receives no arterial supply from a lower source."

The language of this eminent surgeon is decisive and emphatic.

In 38 of 80 dissections there was not an artery that I could find, by careful dissection, derived from the posterior tibial and distributed to the calcanean region, while in every case of 80 dissections there was one or more branches derived from the external plantar, and distributed directly to this part.

Lister, author of the chapter on amputations in Holmes's *Surgery*, advises that the calcanean incision be made either vertical to or sloping towards the heel, commencing at the tip of the external malleolus, and going under the foot to a point considerably below and behind the tip of the inner malleolus. . . . Even the integrity of the *posterior tibial* artery, though desirable, is by no means essential, provided the rest of the subcutaneous tissue has been left uninjured.¹

The great unevenness of the os calcis, its peculiar shape, covered with the attachments of muscles, sheaths, and ligaments, renders it *anatomically* difficult to be dissected out in this operation, without wounding, more or less, the subcutaneous tissue, upon which, Mr. Lister says, the integrity of the flap depends. Moreover, if the "integrity of the *posterior tibial* is not essential," why does this gentleman recommend so positively an incision, that must always save this vessel to the operation? Why not cut an "inch and a half, or, in the case of a long heel," two inches back of the vertical line (as Hamilton does), where he would have plenty of flap and an easier dissection?

The language of these two phases of his operation is irreconcilable, and the assertion that "the integrity of the *posterior tibial* artery, though desirable, is not essential," is not strictly in accordance with the clinical history of this amputation, and is utterly at variance with the anatomy of the blood supply to the calcanean region.

Stephen Smith, in his comprehensive report, says the necessity for re-amputation in this operation is 3 per cent. *greater* than in any other.

Perhaps the cause of this may arise from the reckless sacrifice of the arterial supply to this region, sanctioned by such eminent surgeons as I have quoted.

¹ Holmes's *Surgery*, vol. v. pp. 643, 644.

Table showing origin of the Calcanean Branches of the Posterior Tibial and External Plantar Arteries, as deduced from Notes on Eighty Consecutive Dissections.

Number.	Number of calcanean branches derived from the posterior tibial artery.	Number of calcanean branches derived opposite the terminal bifurcation of the posterior tibial.	Number of calcanean branches derived from the external plantar artery within 1½ inches of its origin.	Number.	Number of calcanean branches derived from the posterior tibial artery.	Number of calcanean branches derived opposite the terminal bifurcation of the posterior tibial.	Number of calcanean branches derived from the external plantar artery within 1½ inches of its origin.
1	0	0	3	41 ³	2	0	2
2	1	0	3	42	1	0	3
3	0	0	3	43	1	0	2
4	0	0	7	44	0	0	3
5	0	0	4	45	0	1	2
6	2	0	5	46	0	1	4
7	0	1	4	47	0	0	2
8	1	0	2	48	1	0	3
9	0	0	1	49	2	0	2
10 ¹	1	0	3	50	0	0	3
11	0	0	1	51	0	0	3
12 ²	1	0	3	52 ⁴	1	0	2
13	1	0	4	53	2	0	6
14	0	0	4	54	1	1	4
15	1	0	3	55 ⁵	0	0	3
16	1	0	3	56	2	0	0
17	0	0	4	57	1	0	1
18	1	0	2	58	0	1	3
19	0	0	3	59	0	0	2
20	1	1	3	60 ⁶	2	0	1
21	1	1	2	61	1	0	2
22	1	0	2	62 ⁷	2	0	2
23	0	0	2	63	1	0	3
24	0	0	3	64 ⁸	0	0	3
25	0	0	2	65	1	1	3
26	0	1	2	66	0	0	3
27	1	1	4	67	0	2	1
28	1	1	1	68	0	0	3
29	1	0	2	69	1	0	4
30	1	0	2	70	0	0	3
31	0	0	3	71	1	0	3
32	1	1	2	72	1	0	2
33	1	0	3	73	2	0	2
34	2	0	2	74	0	1	4
35	1	1	2	75	0	0	4
36	0	0	3	76	0	0	3
37	0	0	6	77	1	0	3
38	1	0	2	78	0	0	5
39	1	0	3	79	0	0	2
40	0	1	1	80	0	1	1
Total . .				51	18	221	

¹ This case bifurcated one-half inch lower than usual.

² Ditto.

³ This case bifurcated one-fourth inch lower than usual.

⁴ Ditto.

⁵ Ditto.

⁶ This case bifurcated one-half inch lower than usual.

⁷ Ditto.

⁸ This case bifurcated one-fourth inch lower than usual.

The writer of this essay, deeming it unnecessary to introduce any further quotations and comments, since he wishes to be concise, simply begs leave to state that he has entrusted his work to no one; that he measured every dissection with accuracy, and noted it on the spot; and that in differing so widely in his results and conclusions with gentlemen of such eminence (whom it seems almost sacrilege to contradict), he reiterates his assertion that the *surgical anatomy of this region has, heretofore, not been correctly described.*

Summary of the Surgical Anatomy of the Arterial Supply to the Tibio-Tarsal Region, as deduced from 80 Dissections.—In 72 of 80 cases the posterior tibial artery bifurcated into the external and internal plantar, on a level with a line drawn from the most dependent portion of the internal malleolus, to the middle of the heel's convexity. (See M N, diagram.)

In 4 of 80 cases this bifurcation occurred a quarter of an inch below this point.

In 4 of 80 cases it was half an inch below this point; any variation from the usual point of division tending, in my experience, invariably downward.

Although anatomists give the arterial supply to the calcanean region (*internal calcanean arteries*) as coming from the *posterior tibial* artery (as shown in extracts given heretofore), the *résumé* of tabulated dissections shows that out of a total of 80 cases, in 38 there was not a single calcanean branch derived above the terminal bifurcation of the *posterior tibial* artery, while in all of these 80 dissections one or more good-sized calcanean arteries were derived from the *external plantar* within one and a quarter inches of its origin.

In 80 cases the number of calcanean arteries derived from the *posterior tibial* was 51.

In 80 cases 18 branches were derived opposite the point of bifurcation, and distributed to this region.

In 80 cases the number of calcanean arteries derived from the *external plantar* was 221, and every one of these was safely inside the line of incision in amputations at the ankle-joint, when that incision is not more than one-half inch posterior to the axis of the leg (see M C, diagram), with the foot at right angles to the leg. In all cases *articular branches* are derived either from the *posterior tibial* or *internal plantar*, or from both. In some exceptional cases the *internal plantar* gave off small branches to the heel.

The anterior flap is plentifully supplied in all instances by branches from the *anterior tibial*, especially the *malleolar* arteries.

The *anterior* and *posterior peroneal* distribute branches to the outer portion of the calcanean flap, those from the *posterior* anastomosing with the calcanean branches of the *external plantar*, and with those of the

posterior tibial, when they are present. I do not think the branches from the *peroneal arteries* sufficiently large to supply blood enough to maintain the integrity of the calcanean flap, especially when their anastomoses are cut off by section of the *posterior tibial*, or of its *plantar* branches, too near their origin.

The relation of the *posterior tibial* artery is quite constant with the two muscles between which it runs; the flexor longus digitorum in front, and the flexor longus pollicis behind. The most reliable guide to this vessel is its pulsation, but in the event the tourniquet is applied, the thumb should be placed over the middle of a line drawn from the inner malleolus to the centre of the heel's convexity, while the four lesser toes are held still by an assistant, the surgeon moves the great toe, and marks the point at which he feels the tendon gliding under his thumb. The tendon of the longus digitorum is found in the same manner, and half-way between the two a curved incision, with its concavity towards the malleolus, will be over the artery. The relations of the veins on either side, and of the *posterior tibial nerve* behind, are among the least variable features of the anatomy of this region. In two cases I have seen the artery immediately behind the inner malleolus. When the *posterior tibial* is small, the *peroneal* branches undergo compensatory enlargement.

P. S.—Since closing these notes, some weeks ago, the writer has made seven additional dissections of this region, with the following result:—

In 4 out of 7 cases, *calcanean* branches originated from the posterior tibial artery—1, one inch; 1, one-half inch, and 2, one-eighth of an inch above the bifurcation.

In 7 cases, 2 *calcanean* branches were derived opposite the bifurcation.

In 7 cases, 19 *calcanean* branches were derived from the external plantar, within one inch of its origin; viz.: 3, within one-sixteenth; 2, within one-eighth; 1, within one-fourth; 4, within one-half; 4, within three-fourths, and 5 within one inch of the bifurcation. Articular branches were, as usual, from posterior tibial and internal plantar.

The posterior tibial bifurcated in every case, as usual. (See diagram.)

ART. IX.—*Concussion of the Brain, with Cases illustrative of different degrees of severity.* By B. J. D. IRWIN, Surgeon and Brevet Colonel U. S. Army.

THE literature of cerebral concussion indicates that while it has always commanded the most profound consideration of surgical writers, still there exists a wide discrepancy of opinion as to what the actual conditions are that constitute the lesion described under the terms—"concussion," com-

motio cerebri—concussion of the brain—apoplexia nervosa traumatica—commotion du cerveau—Erschütterung des Gehirnes.

Samuel Cooper, writing during the first decade of the current century, defined it as "when the brain is violently shaken the effect is termed concussion,"¹ and some twenty years later that "its first effect essentially consists in a sort of contusion or general irritation of the brain, occasioned by the shock which any part of this organ receives."²

Gibson stated that "the accident is immediately succeeded by insensibility, coldness of the skin, relaxation of the extremities, feebleness and irregularity of breathing, and dilatation of the pupils."³

"The diseases (concussion and compression) are frequently coexistent, and so often run into each other, or differ merely in degree, as to render it impossible in every case to lay down accurate distinctive marks between them."⁴

Sir Astley Cooper considered that "concussion is simply a shock which the brain has received, more or less severe, attended with laceration or not."⁵

It was described as a state characterized by "immobility, slow and small pulse, pale and cold surface, and contracted pupil."⁶

One of our most careful writers states that "concussion of the brain produces, immediately after the operation of external violence, fainting, stupor, irritability, or sudden death."⁷

"Concussion or stunning appears to be a shock communicated to the nervous system from the application of such external violence as will produce commotion of the substance of the brain, or interfere with the circulation through it, in consequence of which its functions become temporarily suspended, usually in a slight and transitory degree, but occasionally to such an extent that the patient does not rally for many hours from the depressed state into which he is thrown, and perhaps sinks without recovery."⁸

Guthrie in his admirable work remarks that:—

"By the term concussion of the brain, a certain definable something, or cause of evil which cannot be demonstrated, is understood to have taken place; the effect of which is often clearly proved by the almost instantaneous death of the individual, or by a succession of symptoms which quickly lead to his destruction."⁹

"Concussion (commonly called stunning) signifies sudden interruption of the functions of the brain, caused by a blow or other mechanical injury to the head. There are two degrees of it."¹⁰

¹ Practice of Surgery, by Samuel Cooper, 1808, p. 188 et sequitur.

² Opus citat., 1828, vol. i. p. 380 et sequitur.

³ Gibson's Surgery, 1824, p. 180 et seq.

⁴ Hennen's Military Surgery, 1829, p. 320.

⁵ Sir Astley Cooper's Surgery, 1837, p. 148.

⁶ Sir William Fergusson's Practical Surgery, 1845, p. 466.

⁷ Chelius's System of Surgery, 1847, vol. i. p. 448 et seq.

⁸ Erichsen's System of Surgery, 1853, p. 266 et seq.

⁹ Guthrie's Commentaries on the Surgery of War, 1855, p. 287.

¹⁰ Druitt's System of Surgery, 1859, p. 324 et seq.

"A man receives a blow on the head, by which he is stunned for a longer or shorter period. What is said to have happened? Concussion of the brain.

"A man dies instantaneously, or lingers sometimes perfectly unconscious, after an injury of the head; there are no marks of external violence. Again, what is said to have happened? Concussion of the brain. The head is opened, and what is found? In one case, no deviation from the healthy structure; in another, great congestion of the cerebral vessels; in another, numerous points of extravasated blood scattered throughout the brain-substance; in another, a bruised appearance in some parts of this organ. In all, the case, in common parlance, is said to have been one of concussion of the brain."¹

"Concussion of the brain, as its name implies, consists in a *shaking* or a *tremefaction* of the cerebral mass, and it is easy to understand that such a trembling might be attended by a more or less temporary arrest of cell-action, by capillary stasis, and by functional inactivity, without any persisting lesion or permanent ill result. Such, indeed, is probably the condition of affairs, in the slight cases of concussion or stunning which are not unfrequently met with. A more violent concussion of the brain may cause contusion or laceration of the cerebral structure itself, or rupture of the cerebral vessels, giving rise to extravasation with or without compression."²

Gross, in his exhaustive treatise, in lieu of giving a definition of the injury, confines himself to stating that it has been variously defined by different writers, hardly any two agreeing in regard to it. "The most common idea appears to be that it is a commotion of the nervous fibre, or, more properly speaking, of the nervous tubes, inducing a change, vague and indefinable, in the relations which they sustain to each other and to those vessels."³

From the foregoing extracts from a dozen of the most prominent surgical authors of the present century, it will readily be perceived that concussion of the brain is a condition the exact nature of which it is difficult to define; Ashhurst (*opus citat.*) remarks that it is a rather mortifying confession that the ideas of surgeons of the present day, as to this condition, are much less definite than those of their predecessors, and adds that we have, however, advanced so far, that we are now enabled to say pretty clearly what compression is not, and thus to separate it from other conditions with which it was formerly habitually confounded.

In a matter upon which there exists so much diversity of opinion as to what the special phenomena are that constitute a condition that has been described as ranging between a momentary stunning and "instantaneous death," the latitude for speculation is truly very broad. Every illustration that will aid in shedding light on a topic of so much interest will assist also in harmonizing the conflicting theories promulgated from time to time by recognized authorities on the subject. With this view the following cases are submitted as examples showing different degrees in the severity of the injury:—

¹ Prescott Hewitt, *System of Surgery*, Holmes, 1861, vol. ii. p. 141 et seq.

² Ashhurst's *Principles and Practice of Surgery*, 1871, p. 306 et seq.

³ Gross, *Principles and Practice of Surgery*, 1859, vol. ii. p. 120 et seq.

CASE I. *Cerebral Concussion with Compression produced by Extravasation of Blood; probable Fracture of the Base of the Skull; Recovery.*—Cadet C. S. II., 2d Class U. S. Military Academy, aged 23, born in Indiana, robust constitution and well developed physique, was injured in the following manner:—

At about noon, of April 13th, 1875, while at mounted drill, his horse became unmanageable, ran away, and, in its flight, carried him with great violence against a large tree, at which point the rider fell to the ground. Medical assistance reached him within a few moments, but he was found totally insensible, with stertorous breathing and contracted pupils. Examination failed to disclose any fracture of the bones of the head or limbs, but the chin, right side of neck, and right ear were found bruised and contused from contact with the tree. Upon being taken to the hospital and undressed, a careful examination failed to reveal evidence of any other lesion. In a short time the pupils became largely dilated and insensible to light. All efforts to rouse the patient were fruitless. Brandy and aromatic spirits of ammonia were given and swallowed after considerable delay and difficulty in deglutition. In the course of about an hour he voluntarily moved the left arm and lower limb, and thereafter kept tossing them almost incessantly. The hand was constantly carried to and grasped the genitalia. The right side showed complete hemiplegia. Tickling the sole of the right foot induced motion in the opposite limb. Ptosis existed on the *left* side. The symptoms indicating the existence of intra-cranial hemorrhage, half a drachm of fluid extract of ergot and a dessertspoonful of brandy were administered and repeated twice at intervals of thirty minutes. Shortly after taking the second dose emesis took place and recurred four or five times afterwards. Pulse fluctuated from time to time between 60 and 90. Respiration continued slow and stertorous. Frothy sputa *tinged with blood* appeared at the lips. Ice applied to head and kept there until 11 o'clock P. M. At about 3 o'clock P. M. the hemiplegia gradually disappeared from the right side, and the patient exercised control over all his limbs. The eyelids were kept tightly closed, the lower limbs flexed on the body, the head buried on the chest and hidden beneath the bed-clothes with which he violently entwisted himself. Upon being spoken to repeatedly in loud tones he *showed returning consciousness, responding in a quick guttural "ha ha" or double grunt.* He tossed his body from side to side and his arms about his head almost incessantly. At 6 o'clock, when questioned, he recognized the steward. His condition remained unchanged up to 11 o'clock, when he showed a tendency to go to sleep.

14th. 6 A. M. Pulse 80; temperature in axilla 98.1°. His sleep was fitful and disturbed by tossing and changing his position about every half hour during the night. Urine passed involuntarily. Pupils contracted under stimulus of light. When roused responds in the same guttural half grunt, indicating some consciousness, but inability to articulate words or respond to questions. 6 P. M. Pulse 68; temp. 99.4°. Condition without material change. Got out of bed at 4 o'clock and passed water voluntarily in the *pot-de-chambre*. Fell over while crouching down to the utensil, and struck at the nurses who assisted him. Will not swallow any food, spits it out or shuts his teeth against its introduction. Continues to respond to *all* questions by the same *ha ha*. When asked if he knew me, he nodded his head, and when asked who I was, responded "*Dr. Tillman.*"

15th. 6 A. M. Passed a very restless night, constantly turning over from side to side. Fell asleep at 5 o'clock and remained quiet since.

Pulse markedly dicrotic yesterday and to-day. Temp. 99.4°. Roused up and protruded tongue on being requested to do so. Took a spoonful of brandy and water voluntarily on being requested to take it, and he was then coaxed to swallow about four fluidounces of strong beef essence. This was about being administered *per anum*, when he was induced to take it *per orem*. 6 P. M. Pulse 56; temp. 100°. Recognized his father and called him "father." Took two ounces of beef essence at intervals of two hours during the day. Bowels moved by *lavement*. Passed water in chamber utensil on request to do so.

16th. 6 A. M. Pulse 50; temp. 99.4°. Passed a good night. Slept tranquilly. Tongue coated brown and dry in middle, smells of a sour odour. Had mouth washed out, after which he took some iced water. Took some milk-toast and a soft-boiled egg; the beef essence continued same as on preceding day. 6 P. M. Continued improvement. Took the beef essence as directed, and another egg in the afternoon. Answers questions quite rationally. Tongue continues heavily coated; pulse 50; temp. 98°.

17th. 6 A. M. Slept well. Says he feels no pain except a little in the supra-orbital regions. Seems rational, except that he shows a disposition to give *negative* responses to all questions. Passed urine in large quantities, highly coloured, and loaded with lateritious deposits. Pulse 54; temp. 98.1°. Ordered a slice of orange from time to time to aid in keeping tongue clean; beef essence, chicken broth, and milk-toast during the day. Rest and absolute quiet enjoined. 6 P. M. Since 3 o'clock has evinced a strong disposition to get out of bed, and talks incoherently. Took his nourishment in accordance with directions. Continues to void large quantities of urine loaded with brickdust sediment and of fetid odour. Pulse and temperature without change. Ordered potassium bromide grs. xx at once, which induced quiet and sound sleep up to ten o'clock.

18th. 6 A. M. Became restless again at about 12 o'clock P. M., and got out of bed in spite of the attendant; at 2 o'clock A. M. continued to talk incoherently. Repeated the potassium bromide, and at my morning visit he was still sleeping from its effects. Ordered not to be disturbed until he awakes, then to have beef essence and milk-toast. Awoke at 8 o'clock, took nourishment as directed. Bowels moved by enema. Speaks rationally, and looks refreshed after sleep; pulse 50; temperature 99°. 6 P. M. Is calmer and has been quieter to-day than during yesterday. Was troublesome only twice, but a dose of the bromide at four o'clock produced repose.

19th. 8.30 A. M. Slept well during the night without the bromide of potassium. Woke up only twice and passed water each time. Slept until 8 o'clock A. M.; pulse 60 and feeble; temp. 98°. Appears rational, and says he experiences no pain other than a slight one between the eyes. Skin cool; eyes have a dull drowsy expression; tongue continues coated. His conversation is at times incoherent. Ordered one ounce of magnesia sulphate in sweetened water to cause a brisk movement of the bowels and to produce revulsive action. Took four ounces of beef essence, and ordered a soft-boiled egg and milk-toast at 10 A. M., and beef essence in liberal quantities during the day. The potassium bromide to be given, *if necessary*. 6 P. M. Pulse 68; temp. 98°. Condition unchanged; has slept a good deal since morning. The magnesia sulphate not having acted, a Seidlitz draught was given at noon, but, no action having been produced, three compound cathartic pills were ordered.

20th. 6 A. M. Slept without taking any sedative, but had no evacuation from bowels. Was restless about an hour, and talked with some incoherency. Ordered extract of podophylli gr. j. Continue nourishment same as before. Evening. Has been quite restless during the day, owing in a measure to the action of the cathartic, which has caused the bowels to be moved some four times. Pulse and temperature unchanged. Sighs and yawns frequently. Potassium bromide, gr. xx, at five o'clock, after which he became quiet.

21st. 6 A. M. Rested all night except about an hour; sleeps tranquilly and without any evidence of pain or suffering. Pulse 58; temp. 97°. Continue diet same as before. 6 P. M. Was restless and incoherent at times in his thoughts and expressions. Took his nourishment freely.

22d. 6 A. M. Slept almost all night since 8 o'clock. At 5 A. M. got up, took a drink of water, a dose of bromide, and changed to another bed. Was sleeping at my morning visit. Temperature and pulse without perceptible change. Evening. Passed a good day. Took ten grains of calomel, followed by a dose of castor oil, which produced a free evacuation. Has been quite rational, and took his food without trouble. Pulse without change; temp. 99.1°.

23d. 7 A. M. Has been perfectly quiet during night, having slept through it without taking any bromide during the last twenty-four hours. Bowels moved once in the night. Mind unsettled and wandering, although responses are given correctly. Pulse 80; temp. 99°. Continue treatment as before. Evening. No material improvement; somewhat restless during the day; repeat potassium bromide at 2 P. M.

24th. 6 A. M. Was restless last evening up to 9 o'clock, requiring another dose of the bromide, after which he slept quietly all night up to my morning visit. Pulse 66; temp. 98°. Continue treatment. Evening. Passed a very comfortable day, the best, his father thinks, who has been constantly with him, since the receipt of the injury. Bowels moved twice by oleum ricini. Pulse 68; temp. 99.1°.

25th. Morning. Slept all night without having taken a sedative. Pulse 66; temp. 99°. 6 P. M. Has been somewhat restless to-day; insisted on getting shaved, and has been so anxious to take a bath that his mind dwells on the subject to the verge of aberration. Potassium bromide grs. xx given at 3 o'clock, and repeated again at 6 o'clock, as he manifests unusual restlessness. Pulse 70; temp. 99°. Tongue continues coated, but not so much as heretofore.

26th. A. M. Continued restless until about one o'clock, after which he slept quietly. Pulse 70; temp. 98.4°. Evening. Has been restless, and complains of being tired of the bed. It was found necessary to give the bromide twice during the day.

27th. 6 A. M. Slept all through the night, feels refreshed and looks bright this morning. Pulse 66; temp. 98°. Tongue almost entirely free from the thick coating that has so persistently adhered to it since the fourth or fifth day after he was injured. Diet as before. Oleum ricini to move bowels, which are disposed to torpor.

28th. 6 A. M. Feels very comfortable after a good night's sleep. Appetite good. Same diet allowed. Pulse 70; temp. 98.3°. Tongue perfectly clean.

29th. Slept well without any sedative. Seems rational on all subjects. Bowels not having been moved in two days, a dose of castor oil produced three evacuations. Pulse and temperature without change.

30th. Had another night of refreshing sleep. Responds brightly to questions, and says he now feels perfectly well. He states that he has an occasional feeling of confusion in the frontal region, but no pain. Tongue, pulse, and temperature natural. Allowed broiled chicken, two soft-boiled eggs, fruit, beef-essence, toast, and tea.

June 4. Has continued to improve without any drawback; complains of seeing distant objects double. Right eye shows a slight internal strabismus. Pulse 80; temp. 98°. Sat up yesterday for the first time. Appetite good.

5th. Continued improvement. No pain or morbid sensation of any kind in head. Allowed to sit in the open air for the first time, twenty-second day since the accident.

11th. Having continued to improve steadily up to this time, to-day it was deemed safe to permit him to appear before the Academic Board for his semi-annual examination, and, notwithstanding the severe nature of his recent disability and the fact that he had not looked into a book since the day he was injured, he passed a creditable examination; showing that his memory has not been impaired by the ordeal through which he has passed. Leave of absence for the benefit of his health was granted, and, on the 12th, he left for his home in the West.

August 28. He returned to the Academy to-day looking well and feeling in excellent health, having increased some fifteen pounds in weight during his absence from the institution. There is no impairment of vision, the diplopia having gradually disappeared.

September 5. Made an ophthalmoscopic examination, but found nothing abnormal in either eye. Performs all his duties without any inconvenience.

The symptoms in the foregoing case indicate that the concussion was followed immediately by compression induced by the rupture of one or more small meningeal bloodvessels. The hemiplegia denoted that the extravasation was situated at a point opposite to that which received the external violence. The extremely slow pulse and prolonged intellectual impairment point directly to simple fissured fracture at or toward the base of the skull. The treatment was expectant, but with a strict exclusion of opiates.

CASE II *Cerebral Concussion, uncomplicated; Recovery.*—At about 1 o'clock P. M., September 8, 1875, Cadet J. N. G., 2d class U. S. Military Academy, æt. 22, born in Tennessee, healthy and robust constitution, was injured while at cavalry drill by his horse rearing up and falling backwards upon him. He was very much stunned by the fall, but had regained his sensibility by the time he was brought into the hospital. No fracture or contusion was discoverable, but his appearance and responses indicated simple cerebral concussion. Pulse and pupils natural. Rest and quiet were enjoined, and ice applied to the forehead. At 5 P. M., he complained of severe headache, and inability to rest. Ordered twenty grains of bromide of potassium, which induced some two hours of sleep. Took a small quantity of milk and ate two fresh peaches. 9. P. M. Continues to complain of intense pain in head, and inability to rest or sleep. He moans constantly, and says his head feels as though it would burst. Pulse and temperature free from abnormal increase. Ordered the potassium bromide

repeated every four hours until repose is induced, and the ice to be constantly applied.

9th. 7 A. M. Pulse 88; temp. 100.2°. Passed a very restless night, having only slept about three hours between three and six o'clock A. M. Moans continually. Sensible, but has no recollection of his mishap. Ordered six cut cups to back of neck, a saline cathartic, and an eighth of a grain of sulphate of morphia. Low diet, perfect rest, and darkened room. 9 P. M. Has had some fitful sleep, amounting in all to about three hours. The cupping relieved the intense pain in the head somewhat, but the cathartic failed to produce the desired effect. No exacerbation of pulse or temperature.

10th. 7 A. M. Pulse 76; temp. normal. Slept only tolerably well, and then only after tinct. opii m_{xv} had been administered. Bowels moved after a cold water *lavement*. Head still aches, but not as acutely as during yesterday. No appetite. Substituted warm water for the cold application, with some temporary relief.

12th. Continual pain in head of a most excruciating character, which causes him to moan incessantly. The pain is described as being like a violent constriction, as if tightly tied by a cord, and is located towards the top of the head. Bromide of potassium has been continued in twenty grain doses every four hours, but without much relief.

14th. Pain has gradually lessened, sleeps better, and can now take some solid food. A bronchial attack causes frequent cough, which aggravates the cerebral pain.

18th. Pain has almost disappeared. Appetite returning. Any attempt to study or read aggravates the pain in head, so that he was kept perfectly quiet until the 21st inst., when his condition warranted his return to duty.

The above case is an illustration of one of the minor grades of concussion, and presented but one marked feature of special interest—the persistent and violent pain that drove the sufferer almost to the verge of frenzy by its intensity.

CASE III. *Cerebral Concussion, uncomplicated; Recovery.*—Thursday, August 26, 1875, Cadet J. C. S., 2d class U. S. Military Academy, æt. 22, born in Tennessee, good physique and constitution, while returning to the Academy from furlough, was injured in the following manner: Traveling on a railway train, he was seen to rise from his seat in the carriage, at about 11 o'clock P. M., walk to and open the door leading to the platform, after which nothing more was seen of him by the people on the train, which was then moving at the rate of from thirty to thirty-five miles an hour. As soon as the railway officials became aware of his disappearance, efforts were made to discover him, but, as they were fruitless, it was conjectured that his body had disappeared in a river over which the train passed at about the time he disappeared therefrom.

On Saturday, August 28th, at 11 o'clock A. M., Mr. S. was found seeking shelter in a cart that stood outside of a village house. He was suffering from the effects of cold, wet clothing, and hunger, and his physical prostration and mental aberration indicated that he was still suffering from the effects of severe violence. Subsequent inquiry revealed that he had been subject to occasional fits of somnambulism during his childhood, and, as he had no recollection of when or how he was injured, he was doubtless in a somnambulist condition when he walked off the train. The time of

night, and the fact that he has no recollection of anything that occurred shortly after having got on the train, render it almost certain that he was asleep at the time he was seen to get up and walk from his seat to the door. Examination showed that when he walked off the train he pitched into a bank of loose sand, the impact of his body having made a deep imprint therein. From the time he disappeared from the carriage until he was discovered in the village—thirty-six hours—it is more than probable that he remained insensible from the effects of his violent contact with the ground, as he has no recollection of when or how he left the train. When found it was assumed that he was suffering from malarial fever. He returned to the Academy on the 9th of September, and resumed his studies at once.

When his momentum at the instant he came in contact with the earth is considered, in connection with the usual results to persons who fall from railway trains while in rapid motion, it is truly astonishing that he was not killed at once, or fearfully crushed and broken by the violence of the collision. The particular nature of the ground with which he came in contact, and the recognized fact that persons in a somnambulistic condition seem to possess a degree of immunity from injury, may account somewhat for a fall that ordinarily would have been attended with disastrous results. It is proper to remark that he is a temperate person, and had not been indulging in the use of any intoxicating agent. In regard to the assumption that, when found, he was suffering from malarial fever, it is more than probable that his condition was the result of cerebral concussion, as he never was subject to intermittent disease before or after his rough-and-tumble encounter with terra-firma.

In the election of its military *élèves* the U. S. government exacts not only physical perfection, but absolute freedom from constitutional disease. When to these requirements are added participation in almost constant invigorating exercise, abundance of plain but nutritious diet, regular hours, and freedom from all debilitating excesses, it is easy to comprehend the unusual power of endurance and recuperation shown by them under adverse circumstances, which has given rise to a popular expression at the Academy, that it is impossible to kill a cadet.

U. S. MILITARY ACADEMY, WEST POINT, N. Y.

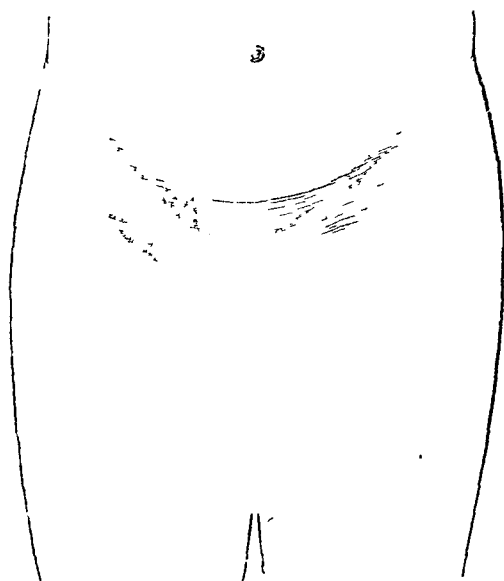
ART. X.—*A Rare Form of Cancer of the Penis; External Perineal Urethrotomy.* By ROBERT F. WEIR, M.D., of New York, Surgeon to the Roosevelt Hospital, etc. (With a wood-cut.)

WHEN the term cancer is applied to an affection of the penis, the surgeon naturally expects the disease to be of the epitheliomatous variety with its readily recognized features. In the following case, however, the

clinical characteristics of the disease presented themselves in a widely different manner from those which are usually met with.

C. C., æt: 18, native of New York, was admitted into St. Luke's Hospital February 11th, 1869 (service of Dr. Weir), with an enlargement of the penis which he said had existed four months. At that time, being in good health, he slipped while ascending a ladder and fell in such a manner as to catch the penis between one of the rounds and the pubes. The blow was severe enough to produce an ecchymosis on the under surface of the organ about an inch from the scrotal junction, together with severe swelling and soreness of the injured parts. No bleeding, however, occurred from the urethra. From that time the swelling steadily increased, the penis becoming tense and continuously erect. The pain, which came on at about the third week, has persisted since then, and was much aggravated by the increased erection produced at night-time by the warmth of the bed-clothes. Lately greater heat in the penis has been noticed by him, associated with decided pulsation, which not only could be felt but also seen. Coincident with the general swelling, the prepuce has been in a state of phimosis and recently has been tightly applied to the expanded glans, but the meatus urinarius is no longer in line with the preputial orifice. From the latter a thin, fetid, purulent discharge has taken place for the past three weeks.

The patient has experienced difficulty in micturating ever since the swelling began, the stream of urine becoming smaller and voided with less force so that at present he is obliged to make a severe expulsive effort in order to accomplish the act.



Condition on Admission.—The penis (see figure) was much enlarged, knobbed, and permanently erect. It measured $5\frac{1}{2}$ inches in length along its dorsal aspect, $6\frac{3}{4}$ inches in circumference at its middle, and $5\frac{1}{2}$ inches around the glans penis. The skin was normal, though somewhat thinned and freely movable on the subjacent parts. The growth did not extend

beyond the root of the penis, and was apparently confined to the corpora cavernosa, which were generally tense and elastic, bulging in places where it was evident that thinning or giving way of the sheath had taken place. The veins of the penis were numerous and much enlarged. The whole organ visibly pulsated. The glands in the right groin were enlarged, and one of them, equalling a pigeon's egg in size, was tender and of a bluish-red colour at its summit. Those on the left side were also involved, but to a lesser degree.

The extent of the enlargement of the penis was rendered yet more striking by the comparatively undeveloped state of the rest of the genital organs. The testicles were about the size of small marbles, and not a sign of hair was to be seen on the pubes. His stature was small, face puny, and physique slight. He stated, however, that his general health had undergone no impairment, though his stepfather pronounced him thinner and more yellow than formerly. No hereditary influence could be traced.

February 15. To-day the patient was etherized, and external perineal urethrotomy performed to afford a more ready outlet to the urine, now much obstructed by the tension of the sheath of the penis. The prepuce was first slit up to expose the meatus and the glans; the latter was found enlarged, and from the corona on its left side was seen an irregular, soft fungoid growth, which bled readily. A No. 5 (English) bougie and subsequently a staff of the same size were then introduced into the bladder, the compressed urethral walls tightly holding the instrument, and the perineal opening duly made.

The further history of the case was, in brief, that while the desired relief to the bladder was obtained, the increase of the tumefaction of the penis and of the inguinal glands was steadily progressive. The fungous mass from the corona glandis grew rapidly and secreted a fluid so offensive as to defy a succession of disinfectants, and it was only neutralized by a mixture of flax-seed meal and permanganate of potassa. This not only controlled the odor, but also relieved the severe pain felt in this part.

His relatives, on learning the nature of his disease, decided to remove him to his home, some thirty-five miles distant from the city, whither he went March 22d, to die some seven months later. His end I learned was hastened by the hemorrhage produced by an incision made into the enlarged gland in the right groin. It had been erroneously thought to be an abscess.

In the above quite unique case it will be seen that the microscopical appearances are unfortunately wanting. Through accident the portion of the sprouting mass from the corona glandis that was removed for examination was mislaid, and the loss not detected until too late to replace it. However, the following case will, to some extent at least, repair this omission. It is, in addition, the only case that considerable research has found similar to the one just narrated. It was presented to the Medico-Chirurgical Society of London in 1863, by Mr. Holmes Coote, under the title of "A Case of Cancerous Infiltration of the Penis, etc.," and is reported at length in the 47th volume of the Transactions of the Society, from which this abstract is made:—

R. C., æt. 55, admitted into St. Bartholomew's Hospital Sept. 10, 1863, with induration, enlargement, and distortion of the entire penis, attended with severe pain. This had existed about eighteen months, and had rendered micturition difficult, requiring at times the use of catheters. He had also a swelling in the tibia of eight months' duration.

When seen by Mr. Coote, he was sallow and emaciated, and was completely prostrate in mind and body. There was complete phimosis; and from under the prepuce there flowed on pressure a sero-purulent, fetid, and offensive discharge. The penis was rigid and of incompressible hardness. It was bent on itself, the concavity directed upwards, so that micturition was difficult in the extreme, and could only be accomplished by the patient throwing himself into strange and uncomfortable attitudes. Subsequently the prepuce was slit up with much relief. The glans penis was nodulated, hardened, and superficially ulcerated. The patient died Oct. 16th of the same year; his general symptoms becoming more severe, and death being preceded by coma lasting for twenty-four hours.

The autopsy showed the corpora cavernosa distended to their utmost by the infiltration of a semifluid, creamy deposit; the fluid exuded from the cut surface as a thick juice, and under the microscope was seen to contain nucleated cells, mostly elongate and caudate, very similar to those deposited in schirrous cancer of the breast. There were also oil globules and exudation corpuscles. The corpus spongiosum and the glans penis were infiltrated and hardened by the deposit of similar material. On closer and more minute inspection it was found that the cancer juice was deposited within the venous sinuses of the penis, but cells were mingled with the fibrous tissue of the trabeculae. The greater deposit was in the former situation. The urethra, compressed throughout its course, was smooth and normal within. Around the bulb and the prostate gland the tissues were matted together by a similar deposit of cancerous matter.

The bladder contained a large ragged ulcer with fungous masses projecting from its surface. Between the bladder and rectum was a chain of glands filled with white cancerous matter, and the lumbar and iliac glands were similarly infiltrated; cancerous deposits were also found in the lungs, bronchial glands, under the periosteum of the tibia and in the tendinous sheaths of the muscle of the right leg and foot.

Mr. Coote, in commenting on this case, said he had never met with a similar case, though he considered an old specimen preserved in the Museum of St. Bartholomew's Hospital, and marked as a tuberculous deposit in the penis, to be more probably of the same nature as the one he had just presented to the Society.

NO. 19 EAST 32ND ST., NEW YORK.

ART. XI.—*The Use of Choleate of Soda to prevent the formation of Gall-Stones.* By WM. C. DABNEY, M.D., of Charlottesville, Va.

MORE than two years ago an article appeared in the *Gazette Hebdomadaire*, by Prof. Schiff, on the action of choleate of soda in preventing the formation of biliary calculi, which was noticed by several English and

American journals at the time, but, so far as I have seen, no cases have been reported, in this country at least, in which choleate of soda has been used for this purpose. My own experience with it has been very limited, but as far as it has gone the results have been exceedingly satisfactory. Before relating the history of the cases in which I have used it, or in which it has been used by others within my knowledge, it may be well to examine the theoretical grounds on which the treatment is based.

It is well known that biliary calculi generally consist of cholesterine and a small quantity of mucus.

Prof. Schiff, in the paper referred to, states that the origin of cholesterine is unknown; there can be but little doubt, however, that the views advanced by Dr. A. Flint, Jr., in 1862, are correct, and that the substance is a "waste product" of nervous tissue which is excreted by the liver, and which is discharged from the body with the feces as stercorine. In chemical composition it is a fatty body, "is soluble in boiling alcohol and ether, and is not in the least saponifiable." (Fownes.) Further, there can be but little doubt that the amount of this substance excreted is in direct proportion to the mental activity and consequent nervous waste. In one of the cases to be mentioned presently there was decided evidence of this; at the same time, however, it should be distinctly understood that the formation of gall-stones cannot be traced in all cases to excessive mental action. Cholesterine is not formed *only* in the brain, but there is more in the blood coming from this organ than other parts of the body, simply because the amount of nervous matter is so much greater there than elsewhere. It is highly probable also that the formation of these calculi may frequently be owing rather to an absence or diminution in quantity of the normal solvent of cholesterine than to an *excess* in the *quantity* of this substance. This normal solvent is choleate of soda, and, whether it be present in diminished quantity, or the amount of cholesterine be excessive, its administration seems to be indicated. Its action is much too gradual, however, for it to be of any benefit in those cases where the calculi are already formed, and it is, therefore, only useful as a *preventive*.

Prof. Schiff advised its administration in doses of fifty centigrammes (about $7\frac{1}{2}$ grains) twice a day, and stated that it should be continued till symptoms of saturation appear, which are digestive troubles, irregularity of the heart's action, etc. It is insoluble in water, and I have always given it in the form of a pill. It has a slightly bitter taste, but not enough to be unpleasant. In one case it *seemed* to cause nausea when first taken, but this soon passed off.

The first case in which I used it was that of a young lady, in the fall of 1873, who was subject to attacks of gall-stone colic at intervals of about six weeks, in several of which I had attended her. Her skin was sallow and conjunctiva somewhat yellow; digestion poor, and there was a great tendency to flatulence. In November, 1873, she had an *exceedingly severe* attack of colic, in which she was attended by Dr. W. C. N. Ran-

dolph, of Charlottesville; I being at the time in Norfolk. Dr. R. told me he never saw a more severe attack, and relief was only afforded by the free administration of chloroform by inhalation. On my return I found her greatly prostrated, as usual, after such attacks. She was immediately placed on the choleate of soda, of which she was directed to take five grains night and morning for two weeks; then to suspend for a month, and, at the end of that time, again to take the choleate in similar doses and at similar intervals. This young lady remained in Charlottesville till May, 1874, during which time she had no return of the attacks. She gained flesh and strength, her skin became much clearer, and she was much less troubled with flatus. She then went to Petersburg, and on a recent visit to that city I learned that she had taken the medicine at intervals of a month or two, and for a week or ten days at a time ever since, and has had no return of her former troubles, her health being better now than it had been for years before this treatment was begun.

The result in this case is quite suggestive in another respect. It is a belief quite generally entertained among physiologists at present that *one* of the functions of the bile is to prevent the decomposition of the food, a result of which would be the formation of gas. In the case of this young lady there had been for some time an excessive formation of gas, which disappeared soon after the administration of the choleate of soda, *which is a normal constituent*, be it remembered, of the bile.

The second case in which I used it was that of a gentleman, a resident of Berlin, then on a visit to this country. He was fifty-seven years old, a great student, with a highly cultivated mind. He told me he had suffered from trouble with his liver since childhood; having every now and then attacks of gall-stone colic. During the months of July and August he had three attacks. Whether a calculus passed into the intestine or not each time, I am unfortunately unable to say. About the first of September I saw him in a violent attack of colic, from which he finally obtained relief. Immediately afterwards I put him on the choleate of soda in five grain doses twice daily. His appetite before this time had been quite good, but he was afraid to eat because he suffered constantly from indigestion, and as one feature of it the formation of wind. His complexion was sallow, and eyes were somewhat yellow. Soon after commencing the administration of the choleate, his skin cleared, and he could eat without fear of causing indigestion. Whether, however, in this case the result was owing to the discharge of the gall-stones, and the consequent free passage of the bile into the intestines, or whether it was the effect of the medicine used, I am not prepared to say. I incline to the latter opinion. His condition continued very favourable up to the middle of October, when he sailed for Europe. I may mention here that the patient himself was so firmly convinced that his improvement was owing to the medicine that he laid in a supply before sailing.¹

These are the only cases where the diagnosis of biliary calculi was certain in which I have used the remedy in question.

¹ Jan. 22, 1876. I learn through a letter recently received that this gentleman has continued to enjoy perfect health ever since he arrived in Berlin.

In 1873 I saw with Dr. W. C. N. Randolph a case of hepatic trouble the nature of which was very obscure. At one time we inclined to the belief that there was "biliary lithiasis," and administered the choleate of soda; its use was not attended by any benefit, however, and we subsequently came to the conclusion that the trouble was of a different nature.

The third and last case which I shall mention was under the care of another practitioner. The patient is a clergyman of *great ability, a very hard* student, and whose mind is frequently overtaxed. When he is engaged merely in the duties of his own parish, he has usually but little trouble; his digestion is good. But when he taxes his mind severely, which he is frequently compelled to do on account of the position he holds in the church and the duties incident thereto, he invariably suffers from severe headache, and, at the same time, hepatic troubles, which have frequently culminated in an attack of gall-stone colic. His physician advised the use of choleate of soda, which he has now been using at intervals for some months, with, I am told, decided benefit. The headache and feeling of lassitude and depression have, it is true, been *only partially* removed, but there has been *no return* of the hepatic trouble. It would seem highly probable that the headache, etc., were caused, in this case, *partly* by the nervous waste *per se*, and it is not to be expected that *this* would be relieved by the medicine, which seems to act only by aiding in the removal of an excrementitious principle.

I have restricted myself, in the present article, to the consideration of the choleate of soda as a remedy in biliary lithiasis; but it is not improbable, and indeed the result in one of my cases makes it *highly* probable, that its use might be beneficial in some cases of enfeebled digestion, when the bile seemed to be at fault. I shall try it in these cases, and trust that others will do so and give the result of their observations to the profession. The cheapness of the article renders it accessible to all classes of patients.

ART. XII.—*Treatment of Wounds; Union by First Intention.* By A. P. KNOWLTON, M.D., of Olmstead Falls, Ohio.

IN the great majority of wounds primary union is desirable, but there is a diversity of opinion in regard to the treatment of wounds for this purpose. When the danger of purulent infection, putrid infection, phlebitis, angiolencitis, osteomyelitis, and secondary hemorrhage are considered, the desirableness of immediate union must be acknowledged. The method of treatment which will secure this in the greatest number of cases is worthy of our careful consideration. This has received the careful attention of many prominent surgeons, among whom are Drs. Bataille, M. Abeille, M. Maisonneuve, Nélaton, Bourgade, and Humphrey. Dr. Humphrey truly says: "That the greatest requisite—the *sine qua non*—for the immediate union of wounds, is, obviously, adaptation of the cut

surfaces—unless these are placed in apposition they cannot easily unite.” In 1852, Dr. Batailhe published a pamphlet recommending the use of alcohol to the surfaces of wounds. In this he followed some of the most ancient surgeons. Prof. Nélaton was led by Dr. Batailhe’s publication to try alcoholic dressings, and was satisfied with the result. Soon after this M. Maisonneuve tried a solution of carbolic acid, and Dr. Demarquay about this time strongly recommended glycerine. Each of these remedies had its advocates, and some surgeons combined them all. In 1867, Dr. Abeille published a memoir; the method which he recommended places wounds in an analogous condition to those which undergo immediate organization in the subcutaneous method. “This method consists in uniting as closely as possible the lips of the wounds so as to bring similar tissues into contact, after cleaning of all blood, discharges, or other foreign matters, removing the dressings as seldom as possible—keeping up a continuous or intermittent imbibition of cold water, according to the patient’s sensations.” In 1867, Prof. Bourgade read an interesting paper before the International Medical Congress, held at Paris, in which he stated that he had for five years, prior to that time, employed perchloride of iron in the dressing of wounds made by the knife in surgical operations.

“As soon as the surgeon has completed his operation, applied ligatures, cleaned the wound, and completely arrested the flow of blood, he covers the whole of the cut surfaces with charpie saturated with a solution of perchloride of iron, taking care to subject all the divided tissues, bone, vessels, nerves, muscles, etc., to the action of this liquid. . . . The perchloride of iron combines closely with the tissues and forms a thick, firm, and adherent covering, which acts as a kind of protective cuirass to the divided parts, and defends them for six or eight days, or even longer, from the action of all external agents.”

Since the publication of the above paper I have employed the perchloride of iron to wounds made by the knife in surgical operations, and also to accidental wounds, and, in a large number of cases, it has fulfilled my most sanguine expectations. In the treatment of wounds where union by first intention is desirable, all surgeons agree that perfect adaptation of the cut surfaces is of great importance. Dr. Humphrey says: “The want of union in a wound is commonly proportionate to the want of apposition of the surfaces, and one great object of the treatment must be, to secure as exact an apposition of the cut surfaces as possible, and to reduce to the minimum all substances, blood, dressings, ligatures, etc., that may intervene between them, and keep them apart.” In small superficial wounds, there is but little difficulty in securing apposition, but in large, deep wounds it is more difficult. For the past six years I have used principally the silver pin, or harelip suture, in large wounds, and have found it to be the surest means of maintaining perfect apposition of the cut surfaces. The size of the pin should be proportionate to the size of the wound, and the amount of strength necessary to hold the lips of the wound in apposition. It seems to me possible in many cases to convert

a compound fracture into a simple fracture. Let the wound be thoroughly cleaned, all hemorrhage arrested, then apply to the whole surface of the wound a solution of perchloride of iron, bring the lips of the wound into perfect apposition, secure them with the silver pin suture, apply a perfectly immovable apparatus for the fractured bone, administer anodynes in doses sufficient to relieve pain and secure quiet, comfort, and sleep. Let the dressings be as infrequent as possible, and if a compound fracture can be converted into a simple fracture the surgeon will feel rewarded for his efforts. We do not claim to originate a new method of treating wounds. The silver pin suture has been used more or less by surgeons, but I have wondered why it has not been used more extensively. After the first dressing with the perchloride of iron we are in the habit of using dilute alcohol with a solution of carbolic acid for subsequent dressings—of late we use the salicylic acid in place of carbolic acid. The following cases, together with many more, were treated according to the method indicated above.

CASE I. Was called, Dec. 5, 1872, to see a lad aged eleven years, who had received a severe wound of the knee. The boy was in the forest with his father, where the latter was chopping wood. The boy had climbed a sapling close by; the sapling bent over and the boy slipped and fell, coming down in front of the father just as he was bringing down his axe; the axe struck the left knee of the boy, severing the patella, cutting down on the outside of the knee-joint, penetrating the joint; with a cut through the synovial membrane about one inch long. After arresting the hemorrhage and brushing over the cut surfaces with a solution of perchloride of iron, they were carefully placed in apposition, and secured with silver pin sutures. A figure-of-eight bandage was applied to hold the fragments of the patella in apposition; a long splint was then applied from the axilla down to about six inches below the foot. An inside splint reaching from the lower part of the upper third of the thigh to six inches below the foot; cross-piece below the foot, another one just below the knee, and one just above; a rack was framed around the joint, leaving a chamber from integument to the inside of the rack about one inch in diameter; and this rack was covered with relayers of ice-bags. The boy was ordered a one-grain opium pill every four hours. Gentle extension, and counter-extension was kept up. This treatment was continued for eight days, when the ice-bags were discontinued, and the wound dressed with dilute alcohol and carbolic acid. Primary union had been obtained. At the end of three weeks, the splint was removed each day, and passive motion practised. The lad made a good recovery, and now has complete use of the leg, with perfect motion of the knee-joint.

CASE II. Feb. 25, 1874, I was called to amputate the leg of one Welch, a middle-aged man. There was an extensive ulcer, involving both bones of the leg, and of fifteen years' standing. The patient was nearly blanched from repeated hemorrhages. Before applying the tourniquet, the leg was elevated, the superficial vessels were emptied by rubbing the leg upward. The tourniquet was applied to the popliteal artery, and the leg amputated below the knee. It was almost a bloodless operation. After ligating the arteries and arresting all capillary bleeding, a strong solution of perchlo-

rel. of iron was applied over the whole cut surfaces. The flaps were carefully placed in apposition, and united with silver pins. The dressings (very light) were kept moistened with dilute alcohol and carbolic acid. In this example, the union was obtained of the whole flaps, except about one-half inch at the first angle, where the ligature protruded. The ligatures came away on the tenth day. The patient walked across the floor with a perfect gait by a crutch, in six weeks from date of operation.

June 26, 1872, I was called to see a man, employed by L. L. & M. S. R. R., who had been run over by a lumber-car. There were extensive intercostal wounds of the scalp, face, and right knee. The wound of the knee was triangular, extending across the knee-joint anteriorly, about five inches in length, and down the outside of the leg about six inches in length. There was a triangular flap turned down, but the knee-joint was not perforated. After closing the wounds the cut surfaces were brushed over with a strong solution of perchloride of iron, and then united in apposition with silver pin sutures. Union by first intention was the result in all the wounds.

These are some of many cases that might be reported, showing the successful result of this method of treating wounds, whether inflicted with the surgeon's knife or by accident.

ART. XIII.—*On the Use of Nélaton's Catheter in Stricture of the Urethra, enlarged Prostate, etc.* By T. C. WALLACE, M.D., of Cambridge, New York.

For the benefit of my professional brethren who are often sorely puzzled, and who sometimes find it impossible to introduce the catheter, by reason of stricture of the urethra, enlargement of the prostate, or perhaps from a swollen and bruised state of the parts, caused by too vigorous use of instruments, I desire to report the invariable success which has thus far attended the use of the India-rubber catheter in my hands.

Nearly two years ago I was in attendance upon an elderly gentleman who required daily catheterization. Each introduction of the instrument was provoking increased suffering and becoming more difficult of accomplishment, and I was convinced the time was not far distant when it would be found impossible to enter the bladder with any ordinary catheter. I procured one of Squire's prostatic catheters, which at first seemed an improvement on the silver and gum-elastic ones previously used, but after a few times using I could not introduce it as readily as I could a silver one. My attention was then called to the India-rubber instrument, and I procured a Nélaton's soft gum catheter. When I got it, it seemed to me utterly improbable (and well nigh impossible) that an instrument possessing so little firmness, and so entirely limp, would ever pass through the urethra and enter the bladder. However, I was most agreeably disap-

pointed, for its passage was attended with no difficulty whatever, and with scarcely any pain to my patient, not a tithe of what accompanied the use of the other. Since that time I have used this form of catheter altogether, entirely discarding all others. It has never disappointed me, neither have I ever found any difficulty in its introduction. Last week I was called to see a man living some distance from here, who was suffering intensely from retention of urine caused by prostatic hypertrophy. I found that three of the ablest physicians had been trying for twenty-four hours to catheterize him without success. The case was desperate, and puncture of the bladder through the rectum had been determined upon, and would have been resorted to, but that the patient would not consent to it until my arrival.

The Nélaton catheter was introduced into the bladder in less than one minute, producing very little pain. I left one with the patient, and he has since been able to relieve himself whenever necessary, introducing it as readily as could the most skilful surgeon. My only object in writing the above, is to disseminate through the columns of the "Journal," a wider knowledge of this invaluable instrument, which has only to be used to be thoroughly appreciated, and which is a priceless boon as well to the patient as to the physician.

ART. XIV.—*Bronchitis complicated with Lobular Pneumonia; Death by Bronchial Hemorrhage.* By WM. KELLER, M.D., of Philadelphia.

Mrs. Mag. V., 66 years of age, though a native of Germany, has lived for many years in this city. She had suffered for the last six months from indigestion and pain in her side, and having exposed herself a few days previously, she complained on the 5th of February of a severe cough and pain in the left side in the region of the 7th and 8th rib. She expectorated a thick, white slime. The sound produced by percussion was approaching to tympanites, and a sharp, mucous rattling was particularly heard in auscultating the left side. The right lobe of the liver extended low down in the abdomen, and the left lobe, extending over the stomach, was sensitive to the touch, the tongue was charged and appetite gone, the pulse 104. I ordered aq. lauro-ceras. with acetate of morphia, a salve containing iodide of potassium and camphor to be applied over the left lobe of the liver, and a sinapism on the painful region of the chest. Though next morning all pain was gone, the expectoration contained a small quantity of (characteristic?) rusty sputa. The pulse 120. Temperature 100° F. Ten grains of digitalis in an infusion were ordered, the anodyne continued.

The 8th the expectoration was purulent. Pulse 120. The treatment continued; to operate on the bowels, $\frac{1}{4}$ gr. of calomel with 5 grains rhubarb were given.

At four o'clock next morning, after sleeping quietly, she was awakened by coughing, and finding she was expectorating blood freely, she sent for me. She had lost in this way about four ounces of pure arterial blood. Whilst I was there she expectorated white mucus, partly by itself, partly mixed with blood, her voice was unimpaired, the mucous rattling in the chest continued. Pulse 116. Temperature 101° F.

Though I had recommended to her absolute quietness, she got upon the chamber, there the hemorrhage recommenced suddenly, and so she expired.

I performed the *post-mortem* three days after. The lung freely spotted with black pigment, quite emphysematous, showing it particularly at the edges. The upper part of the left lobe was posteriorly attached by slight, old adhesions to the costal pleura; the upper half of this lobe was in a state of lobular gray infiltration. Whilst a piece of an inch diameter was containing air enough to swim in the water, the small infiltrated lobuli isolated, sunk. Otherwise the tissue of the lungs was pale on the anterior part, the bronchial ramifications containing a great deal of mucus, whilst in the posterior part the tissue was infiltrated with a foamy, red liquid.

The mucous membrane of the bronchi at their entrance into the lungs was partly covered with blood, and intensely injected as far as I followed in the trachea. Under the microscope the capillaries were distended with blood corpuscles, the epithelium seemed to be gone, in pressing there appeared at the openings of the follicles minute drops of mucus. The pericardium contained some yellowish liquid. The heart and the large blood-vessels were exsanguine, otherwise quite normal.

The left lobe of the liver was elongated, extending over the stomach; the right lobe extended into the pelvis, in the region of the umbilicus, showing a deep groove, evidently produced by an habitual pressure, which resulted, as I ascertained, from wearing a tight belt around the waist in youth, according to the custom of the inhabitants of the German Alps, her native land. The texture, colour, and contents of the liver were normal. The gall-bladder, filled with a thin, yellow bile, contained two small biliary concretions.

The spleen of normal size, pale, friable, and pulpy in its substance. The pancreas normal. The kidneys a little enlarged, showing in dividing them, clearly the uriniferous canals in the cortical substance. The stomach filled with dark bloody water and blood; the mucous membrane dark-red, coloured by imbibition. The mucous membrane of the duodenum was only an inch or two below the pylorus, covered with a bloody fluid; the small intestines covered with a yellowish, the colon with a thick, gray mucus, as also the appendix. At the juncture of the cecum with the colon I found a single male of the *trichocephalus dispar*, where it is usually found in affections of the mucous membrane. I do not remember that I ever observed before a hemorrhage of the mucous membrane of the bronchi proving fatal, without destruction of the pulmonary tissue, though we meet them not unfrequently in practice, and there is, indeed, rationally no reason, why they might not be caused by congestion or frequently a bleeding of the nose.

ART. XV.—*Encephaloid Disease of the Right Humerus, situated in the course of the Brachial Artery, and simulating Aneurism in many of its Symptoms; Amputation at the Shoulder-joint; Recovery.* By WILLIAM A. GOTT, M.D., of Viroqua, Wisconsin.

MRS. M. H——, aged 38, the mother of several children, of nervous-sanguine temperament, placed herself under my care Oct. 17, 1875, and gave me the following history of her case: Notwithstanding the cares and anxieties incident to the supervision of a large household, she had enjoyed a fair state of health, with the exception of occasional attacks of uterine derangement whenever “overworked,” and which invariably subsided after a short interval of quiet and rest, to within the early part of March last; she then began to experience pains of a neuralgic character in the right arm immediately below the axillary region, extending down along the anterior and inner aspects of the arm and forearm to the back of the hand and fingers, together with sensations of tingling and numbness. This array of symptoms persisting, and daily becoming more marked, she was induced to consult a physician, an irregular, who, under the impression that his patient was suffering from the effects of muscular rheumatism, prescribed, from time to time, a great variety of anodyne and stimulating liniments, which gave her some relief, of short duration, however.

In the early part of April following, whilst engaged in bathing the limb with warm water, she for the first time discovered the presence of a tumour, oval in shape, and no larger than a hickory-nut, on the upper and inner aspect of the arm, at a point about opposite to the humeral insertion of the deltoid muscle; the tumour was of firm consistence, free from tenderness except when pinched, of the colour of the surrounding parts, and freely movable; she is quite positive of the *absence* of *pulsation* in the tumour at this time; and her statement to that effect is corroborated by that of her husband, who casually examined the tumour on one or two occasions.

During the remainder of the spring and the greater part of the summer months, the pain became greatly intensified throughout the limb, at one time neuralgic, at another dull and aching, and without cessation; to alleviate it, and to make life endurable, the free use of anodynes was had recourse to; the sensations of tingling and numbness became more marked, as also the œdema, and the limb now had become so useless as to require the support of a sling; during this period of time no perceptible alteration in the appearance or size of the tumour was observed.

In the latter part of August, a perceptible change began to take place in the tumour; it now began to enlarge slowly, to throb and beat (to use her own language), whenever she worked hard or walked fast; at such times no perceptible increase in its size was observed; of this fact she is also quite positive.

When the case finally came under my observation, an elongated tumour occupied the upper half of the arm commencing from just within the axilla, and extending downwards along its inner and anterior aspects, measuring nine inches in its long axis, and six in its short axis, it was uniformly soft and elastic, comparatively free from tenderness except when roughly handled, of a dusky-red colour, with the subcutaneous veins en-

larged and ramifying over its surface, and firmly fixed, resisting any attempt to lift it from its bed.

There was a strong *pulsation* synchronous with the heart, felt and perceived over nearly the upper half of the tumour, unexpansive and without bruit, cessation of pulsation on compression of the artery on the cardiac side, without subsidence of the tumour, and no increase in its size by pressure on the distal side, but diminished pulsation in the radial artery.

An exploratory puncture made into the most prominent part of the tumour was followed by the exit of a few drops of dark blood. The limb below the site of the tumour is œdematous, and its temperature diminished; there is no impress of the cancerous cachexia.

Oct. 19. The patient is anxious for operative measures, and thinks the tumour can be removed without difficulty. It is deemed expedient, however, on account of its somewhat doubtful character, to delay such measures for the present. She is placed upon appropriate treatment preparatory to any operation that may be deemed advisable. To relieve her intense sufferings, Magendie's solution of morphia is administered subcutaneously, to be repeated as occasion requires.

21st. The tumour was re-examined to-day. No apparent change in its appearance has taken place. The pulsations in its upper half are still strong; there is no expansion and no bruit; the pulsations of the radial artery are somewhat diminished in strength. Hypodermic injections of morphia are still to be given to quiet pain in the limb.

25th. The tumour has increased somewhat in size. The pulsation of the radial artery has become extinct; the pulsations in the upper part of the tumour still continue with unabated force.

30th. Within the past few days the tumour has continued to increase in size, and now measures ten inches in its long and seven in its short axis. An exploratory puncture at the point corresponding to the most prominent part of the tumour gave exit to a jet of straw-coloured serum in considerable quantity, with the effect of reducing the size of the tumour somewhat; pulsation in the radial artery remains extinct. Have diagnosed the tumour encephaloid.

31st. To day, at 10 A. M., the patient was placed on the table for operation. Anæsthesia having been induced by a mixture composed of one part of alcohol, two of chloroform (Squibb's), and three of sulphuric ether, a small exploratory incision sufficiently large to admit the index finger was made through the integument and adipose tissue over the most prominent part of the tumour, and by cautious dissection its sac was reached unopened; a small opening now being made into the sac, a considerable quantity of straw-coloured serum escaped; the index finger introduced into the body of the tumour at once corroborated the accuracy of the diagnosis previously made.

Amputation at the shoulder-joint was accordingly performed, assisted by Drs. H. A. Chase and E. W. Tinker of this place, and Dr. W. W. Rusk of Chaseburg, Wis. The flap was taken from the deltoid muscle entirely, for obvious reasons. The patient reacted well from the immediate effects of the operation, and convalesced without the occurrence of a single untoward symptom. She is now in the enjoyment of good health.

Remarks.—On dissection of the specimen, the relative position of the humeral artery to the tumour was carefully observed. It was found with its accompanying vein, on the inner wall of the tumour about midway

between its base and summit, embedded in the thickened tissues composing its firm walls, occupying this superficial position for the distance of three or four inches, when it appeared to enter the body of the tumour itself, to lose itself in the mass of brain-like substance composing it.

A malignant growth, especially when of the encephaloid variety, situated in the course of a large artery, occasionally comes under the observation of the surgeon with symptoms resembling those of aneurism so closely as to render accurate diagnosis a matter of doubt and perplexity.

In the case above reported, the tumour, which had attained considerable size when the patient placed herself under my care, presented features common to both of these affections, and apparently so intimately blended as to involve the real nature of the case in very grave doubt, to say the least. Surgical authorities, both at home and abroad, with few exceptions, lay great stress upon the so-called "scientific tests" of aneurism, which when generally present and well marked, are said to clearly establish the diagnosis in the majority of cases.

Mr. Erichsen (*Lancet*, 1858) makes use of the following emphatic language in commenting upon three cases of puncture of aneurism mistaken for abscess by the medical men in charge.

He says:—

"In a majority of cases of aneurism nothing is easier than to make the diagnosis. When an aneurism is thoroughly formed, is pulsating eccentrically, and has a distinct bruit; when the pulsation and bruit are arrested by compression of the artery leading to the tumour; when the size of the tumour diminishes; when the vessel leading to it is compressed; when the pulsation and bruit both return on the pressure being removed; when that increase in size is evidently eccentric and the pulsation eccentric from the interior of the tumour—a dilatation as well as a pulsation—there can never be any serious difficulty in distinguishing on aneurism from everything else."

It is undoubtedly true that, in cases in which the "scientific tests" of aneurism enumerated in the above extract are mostly presented and well marked, "nothing is easier than to make the diagnosis."

It unfortunately happens, however, that the surgeon is frequently called on to give his opinion in a case of aneurism in which its various "scientific tests" are either wanting in part, or altogether absent. The records of clinical surgery prove, in a great number of instances, beyond the possibility of a doubt, that these characteristic features of aneurism cannot always be depended on; that they may be prominently present without the presence of aneurism, and may be wanting when aneurism exists.

In the *Med.-Chirurgy. Transactions* (vol. xxxv.) we find a striking example of this class of cases, in a case of malignant tumour mistaken for aneurism, in which the characteristic features of aneurism, pulsation, bruit, etc., were well marked. The tumour having been diagnosed an aneurism, the common iliac was ligated, and the death of the patient was the result. In cases of tumours, malignant, non-malignant, and aneurismal, forming in the course of an artery, and so far influenced by its pulsa-

tions as to present any or all of the characteristic symptoms of aneurism, an accurate history of the case is of the utmost importance to a complete understanding of its essential features.

Without this important factor the surgeon, as the records of clinical surgery will show, will oftentimes grope in the dark, and, especially in cases of spontaneous aneurism, be led to the commission of errors disastrous alike to himself and his patient.

VIROQUA, WIS., January, 1876.

ART. XVI.—*Ovarian Cyst; four Tappings in eleven years; two Labours at Full Term, and one Miscarriage during existence of the Tumour; Ovariectomy; Recovery; Menstruation from the Pedicle.*
By T. F. PREWITT, M.D., of St. Louis, Mo.

MRS. O., æt. 39, the mother of six children; first discovered the existence of a tumour in the abdomen immediately after her confinement at full term, August 14, 1864. Three months after this was tapped for the first time, and has been tapped three times since, at intervals of two or three years; four to six gallons of fluid were drawn at each tapping; the last was May, 1874. She was again delivered of a child at full term December 23, 1866, and had a miscarriage at four months October, 1874. After the drawing off of the fluid, there had always been great improvement in her health and strength for about a year; but when the fluid reaccumulated, her health again suffered, she became emaciated, œdema of the lower extremities occurred, etc. In September last great distension had again occurred; she had already become considerably emaciated, and her feet had begun to swell. Made a diagnosis of ovarian tumour, a single large cyst, free from pelvic adhesions, and advised its removal. After explaining to her that tapping was not free from danger, that it was, at best, but a palliative measure, and that each resort to it exhausted her the more and diminished her chances of recovery from the only curative measure, ovariectomy, she decided, with a full knowledge of the dangers connected with it, to submit to the operation.

Every precaution was then taken to guard against septic infection. The house, fortunately, was a new one, well lighted, with a southern exposure. The bedding, clothing, towels, and instruments were all thoroughly disinfected with a solution of carbolic acid, and clean, new sponges prepared.

At 12 o'clock, October 14, in the presence of Drs. J. T. Hodgen, A. P. Laukford, J. M. Scott, P. G. Robinson, J. K. Baudry, B. M. Hypes, and W. A. McCandless, to all of whom I am much indebted for assistance during the operation, she was brought under the influence of Squibb's stronger ether, Dr. McCandless kindly taking charge of the anæsthetic. She bore this well, her pulse remaining full, soft, and scarcely accelerated above the normal. As she was slow in coming under the influence of the ether, a few drops of chloroform were poured upon the napkin. At my

request Dr. Scott introduced a catheter, and emptied the bladder. An incision in the median line of two inches and a half in length was first made, and subsequently enlarged to five inches.

The tumour was found free from adhesions, and a Wells trocar and canula, with tubing attached, was thrust in, and about two buckets full of a pale straw-coloured fluid drawn off.

The sac was found to be connected with the right ovary, and to have for its pedicle nearly the whole of the breadth of the broad ligament, making a very short pedicle, with a breadth of at least six inches.

The Fallopian tube could be seen running along near the base of the tumour, greatly lengthened, extending up upon the side of the cyst, with the fimbriated extremity still well marked.

I had already determined, if the case was a favourable one for it, to try enucleation, as first suggested and practised by Prof. Miner, of Buffalo. Accordingly, having first nicked the peritoneum of the pedicle, I inserted my finger under the base of the tumour, and commenced the process of peeling off the peritoneum, with the bloodvessels, from the cyst-wall proper. In the collapsed condition of the tumour I found some difficulty in doing this. I therefore requested Dr. Hodgen to introduce his hand, and carry it to the bottom of the cyst, to serve as a point of support. This facilitated the matter somewhat, but unfortunately I ruptured a large vein running along with the Fallopian tube, which bled to such an extent as to require ligature.

This decided me to abandon further attempts at enucleation and apply a clamp. The vein was compressed at the point of rupture, and the cavity that had been occupied by the base of the tumour sponged out. It was found that there *was no bleeding from this surface*, and instead of a broad, short pedicle, I had a long narrow one, made up of the collapsed peritoneum, areolar tissue, bloodvessels, etc., that had inclosed the base of the tumour.

A Wells' Clamp was applied as high as the rupture in the vein would permit, and the pedicle cut off two and a half inches above it. The pelvic cavity was now thoroughly cleansed by sponging out every drop of blood and serum, and the incision brought together around the pedicle by six silver wire sutures carried through the whole thickness of the abdominal walls, *including the peritoneum*. The usual compress and bandages were applied, and the patient put to bed at about one o'clock.

Had some nausea and made one or two efforts at vomiting while recovering from the anæsthetic, to be attributed perhaps to the small amount of chloroform administered with the ether. The abdomen was firmly supported during these efforts, and the nausea soon subsided. Some evidences of shock, too, manifested themselves as the anæsthesia wore off, but these soon disappeared under appropriate treatment.

A hypodermic injection of morphia, gr. $\frac{1}{2}$, was administered, and the patient was soon very comfortable.

6.30 P. M. Pulse 80; of good volume; skin warm; drew off *two pints* of healthy urine, showing the free action of the kidneys so much insisted upon by Mr. Spencer Wells. No food was allowed by the stomach, but nutritive enema of beef tea and milk directed to be given every four hours.

Hypodermic injections of morphia were given at intervals to relieve pain.

October 15. Allowed small quantities of milk and beef-tea by the stomach; pulse 88; temperature 99° to 100° Fahr.

16th. Patient suffered during latter part of the night with pain and nausea, and vomited some. Vomiting recurred at 1 P. M., and the material ejected from the stomach *looks and smells like stercoraceous matter*.

All food by the stomach was again forbidden, and under the influence of morphia hypodermically, the application of sinapisms to the epigastrium, and the internal administration of hydrocyanic acid, champagne and ice, these alarming symptoms disappeared. During the further progress of the case scarcely an unpleasant symptom occurred. Some flatulence of the bowels gave rise to considerable discomfort, relieved by the simple expedient of introducing the detached point of a syringe into the rectum and allowing it to remain, thus permitting large quantities of gas to escape.

Cystitis also developed from the previous existence of cystocele, and the failure to completely empty the bladder, with the repeated introduction of the catheter. Quantities of thick ropy mucus were secreted, completely blocking the eye of the catheter and preventing the flow of urine. This disappeared promptly after washing out the bladder a few times with flaxseed mucilage.

Throughout the whole course of the convalescence, the pulse never exceeded 108, and the temperature never exceeded 101°.

A small abscess formed at the upper side of the pedicle, seemingly parietal, and caused the patient to be confined to bed longer than would have been necessary otherwise, and the highest temperature (101° F. on 23d day) was reached during its formation.

In conclusion I would say, that, though failing to carry out enucleation in this case, I am impressed with the feasibility and safety of it. Indeed, I am disposed to regard it as the most rational treatment of the pedicle in all cases adapted to it. While it would obviously be less readily accomplished in a simple cyst than in a semisolid tumour, the failure in this case was due to myself, perhaps, rather than the inherent difficulty in the process, and my experience in this, I believe, would enable me to succeed better in a similar case in the future. I might too have adopted Prof. Miner's suggestion, and applied a metal ligature to the bleeding vein, completed the enucleation and dropped the whole pedicle back into the abdomen as in any other case, but at the time thought it better to apply the clamp.

January 13, 1876. Mrs. O. called upon me to-day, looking greatly improved in health and rapidly gaining flesh.

A small red granulating tumour as large as a small cherry projects at the site of the pedicle, and from this a discharge of blood takes place at each menstruation, and continues during the whole of that period. She is now menstruating for the third time since the operation, and this phenomenon has occurred during each of the three periods. Menstruation otherwise normal.

ART. XVII.—*Case of Amputation of Left Thigh at Upper Third; Speedy Recovery.* By WM. M. FINDLEY, M.D., of Altoona, Pennsylvania.

C. D., æt. 15 years, was injured in July, 1872, while attempting to get on a freight train in motion. Holding on to the side of the car with one hand, and endeavouring to place his foot in the stirrup, he was whirled around and thrown alongside of the track, so closely that the projecting edge of the wheel crushed the knee, lacerated the leg from the middle of the thigh, and stripped the muscles in shreds from the back part and inside of the limb. An attempt to save the limb was made by the surgeon who was first called, but the vitality of the soft parts being lost, extensive sloughing took place, the leg stiffened at a right angle at the knee, and from three inches above, over the knee, and half-way down the leg to the ankle, the surface was one mass of suppurating granulations, with no attempt at cicatrization. This was the condition when I was called to see him in August, 1873, a year or more after the injury to the leg; in addition, there was great emaciation, and marked chronic pyæmia, excessive expectoration, and profuse hectic sweats. Deeming it useless in his exhausted condition to try to heal such an extensive surface, seeing that the blood was so charged with effete matter, which the lungs were endeavouring to throw off, and the skin pouring out its excretions to assist in eradicating, I decided to amputate, although almost a *dernier ressort*. Having given the attending physician a guarded prognosis, I operated August 16, 1873; temperature, 60 to 65°; barometer, falling, with rain and storms, and clearing-up showers; pulse, 135; spirits good and anxious for the operation. The flaps were irregular, owing to the cicatrization and irregularity after the loss of so much time. They were neither lateral nor antero-posterior; rather between these; the hemorrhage was quite easily controlled, and the patient rallied nicely from the anæsthetic. Not much muscular contraction in the stump; lead sutures and close dressing, which was not removed for eight days, when the stump was found healed by first intention, with the exception of the parts through which the ligatures were drawn. His recovery was rapid; pulse lowered, cough and expectoration gradually decreased, appetite returned, hectic subsided, and in three weeks he was taken twelve or fifteen miles in a spring wagon to the country, the stump perfectly healed—and to-day he is as healthy a boy as is to be found in the community. The joint, on examination, was found united by true bony ankylosis, and the whole cancellated structure and medullary cavity filled with a reddish pulp or jelly, very offensive.

The fact that the femoral vein in this case gave most trouble as to hemorrhagè, and required ligaturing, may be an interesting point. The femur was sawn through about one inch below the trochanter major, leaving little more of a stump than after disarticulation.

ART. XVIII.—*Case in which various Foreign Bodies were Inserted in the Brain with Suicidal Intent, and retained there for several months.*

By WM. B. CARPENTER, M.D., Attending Physician to the Kansas State Prison.

ABOUT the month of October, 1874, Thomas Waters, a prisoner in the Kansas State Penitentiary, ret. 28, who had been an inmate over six years, attempted suicide in a novel manner.

Three years previously he had been duly examined by a competent medical board and pronounced insane, and accordingly sent to the State Asylum for the Insane for treatment.

At the expiration of twelve months he was returned to the prison as cured, and with the remark of the superintendent, that he had never considered him insane, in which he was mistaken, as the sequel shows.

I directed him to be admitted to the prison hospital, where he was kept for the subsequent portion of his term. He took his meals with the rest of the hospital inmates, and except occasionally (during the last year) was quiet and obedient to the rules, getting a little hilarious or impertinent, but upon being reprovcd he at once desisted. He was rather inclined to restlessness, but seldom giving any trouble was allowed to amuse himself as he pleased. His general physical appearance, habits, and secretions indicated reasonable bodily health, so that he very seldom required medicine.

In the latter part of the summer of 1874, he several times inquired of the hospital steward, what were the dose and effects of strychnia, of morphia, and of chloroform. Nothing was thought of it at the time, in fact the steward did not then mention it, but in an unguarded moment the prisoner obtained entrance to the dispensary, adjoining the ward, and drank from a bottle a quantity of chloroform; it was some moments ere the door could be broken open (as he had been cunning enough to turn the key), and the bottle forced from him. The quantity he had taken was so great as to produce violent emesis, which relieved the stomach of the largest portion, but the vomiting was kept up for several days.

The probability is, that, having witnessed the use of the anaesthetic at different times for surgical operations, it suggested itself to him to be an easy way to terminate his existence; this was the first intimation of a desire to take his own life. He made attempts afterwards to gain entrance to the dispensary, but was always prevented.

One evening at the close of one of my visits to the prison, the hospital attendant stated that Waters wished to see me; he was usually so reticent that I was surprised, and asked what he wished; the nurse remarks he has been putting wires and things into his head, and wishes you to remove them. I repaired to the ward and found Waters sitting quietly upon his cot, very polite and willing to allow me to make an examination of his head. At about an inch above the top of the right ear I found a small punctured wound which he had made with an awl, and on passing a probe felt a soft fleshy substance. With a pair of dressing forceps I seized the end of it, and attempted its removal, but failed. I then made an incision with a bistoury across the wound half an inch in length, and applied the following forceps, and after two forcible attempts, withdrew from the opening a piece of No. 20 house wire, four and three-fourths inches in

length, perfectly straight, and with the smallest possible portion of the end to get hold of. This wire had been retained there just twenty-four hours, and on entering the room he had told me his only inconvenience was a severe headache, which, within thirty minutes after the removal of the wire, he said had entirely ceased. I directed him to be kept quiet, with a cool damp cloth to the head, and expected there would result cerebral disturbances, and perhaps paralysis; but as no untoward consequences supervened, nothing more was done beyond keeping a close watch upon his movements, and not allowing anything to be left within his reach with which he might damage himself.

One morning, some four weeks after this, I learned that he had the evening before seized upon an awl which a frescoer who was at work in the ward had been using, and on refusing to return it he was reported to the deputy warden. When that officer entered the hospital, Waters seized upon a wooden bucket lid, and drove the awl downward through the top of the head up to the handle; he then submitted passively, and allowed the awl to be withdrawn.

No untoward results followed *this* attempt, but for greater security I directed him to be confined in a cell. Each cell is provided with a small broom, with which the occupant is required to sweep his cell daily; this broom was unfortunately overlooked, and, being found by Waters, he secretly unwound a piece of the wire from it, and during the night thrust it into his head at the lateral opening; this time producing paralysis of left arm and leg. When found in the morning rounds by the cell officer, he was lying upon his mattress helpless. He was then ordered to be returned to the hospital, and on being lifted upon a litter for transfer, the attendants discovered a piece of wire in his hair, one end of which was thrust into the lateral opening. This wire must have transfixed both hemispheres, as the skull could be easily felt at the opposite side, resisting the passage of the wire; he having, in the presence of all, tried repeatedly to thrust it further into the head. I watched him carefully from day to day for two weeks, when at once he began, first, to use the hand, then the foot, then the limb, and finally to walk; during this time no symptom of undue excitement was developed.

From this date he expressed a great desire to live and to get well, making no further attempts to destroy himself; once in awhile he became abstracted, keeping by himself, but only for a day or two; at all other times was cheerful, conversant, even witty, but in the presence of visitors usually restless. On questioning him during his melancholy moods I ascertained he usually had at such times headache, and late last spring he remarked he thought his headache arose from the *needle* working through his brain, which he had put in at the side of the head before the wire, and a nail, too, he added. As the wounds had been healed over several months I gave the matter no great credence, and seldom asked him about it, as he expressed a wish to forget it. During the months of June, July, and August, he improved so much that he was permitted to go and come at will about the prison yard, and discharged many little offices for the hospital steward; but it was found that any exertion that had a tendency to excite the circulation precipitated a slight epileptic attack; these were, however, not frequent.

He watched the days and weeks for the close of his term, talked of going out again into the world, and of his plans. After its close he obtained work in the vicinity, and was allowed to return to the hospital to take

his meals, and to sleep at night. After a week had passed, and he had become accustomed to the change, the party for whom he laboured made arrangements for Waters to sleep at his house. Not resting well the first night or two, all around him being strange, he went one afternoon to the city, a few miles away, and purchased a drachm bottle of morphia, for which he made a good bargain with the druggist, getting a deduction in the price of the article. Had he wished merely to destroy himself he would have cared little what it cost him, so he obtained the article; but the evidence given at the inquest proved that he only wished to obtain sleep. Failing to make his appearance at breakfast, his employer went to his bed-room and found him sleeping heavily, from which he was never aroused, dying soon after discovery.

The *autopsy* was held as soon as practicable thereafter, and the examination of the brain, with the assistance of Dr. Charles C. Shoyer, of Leavenworth City, revealed the following facts: Lying side by side, embedded in the medullary substance of the middle lobe of the right hemisphere, and in a horizontal position, were a piece of No. 20 broom wire two inches in length, and a large button needle with a piece of black linen thread attached. The end of the wire slightly protruded, but the needle and thread were entirely *within* the membranes and firmly adherent to them. Dividing the lobe along the track of the wire and needle, with the expectation of seeing traces of at least the *first* wire, which he had a score of times thrust in and out at this opening in the middle lobe before many witnesses; to my astonishment there was no trace of injury beyond the length of the needle and *last* wire. Along the bodies of these, for several lines each side, the brain substance was broken down and discoloured, which I attributed mainly to the presence of the thread. Outside of this there was nothing abnormal, except where the bodies pierced the coverings; these were thickened and firmly adherent to each other, the convolutions adjacent, and to the thread at the eye of the needle.

On removing the top of the cranium I had observed the end of a piece of wire similar to the others, protruding above the dura mater, and on examination found it had entered to the right of the sagittal and posterior to the coronal suture, near to their crossing, descending vertically; its lower end was felt resting upon the dura mater at the base of the brain, and immediately in front of the fissure of Sylvius. It was in close proximity to, but did not wound the longitudinal sinus or the corpus striatum; it traversed the superior cortical portion, the internal boundary of the corpus callosum, and the medullary section; this accounts for there being no loss, after his injuries, of any of the special senses, or any symptoms of aphasia from an infringement upon the island of Reil. Upon following up the track of the wire, which was two and three-eighths inches in length, we came upon an imperfect fourpenny finishing nail, flat, pointed, and headless, about one-fifth of an inch in width at its broadest part, suspended vertically, side by side, with the wire. Owing to its greater weight it had settled lower than the upper extremity of the wire, but was strictly within the boundary of the medullary mass, except the extreme lower point, which rested on the dura mater at the base of the brain, instead of the wire, as was at first supposed.

The extent of softening along the course of the bodies last described was not as extensive as of those of the middle lobe, but *all* were more or less insulated by a gelatinous substance closely adhering to them.

Dimensions of Bodies which had been inserted in the Brain.

1st wire	$4\frac{3}{4}$	inches in length.
2d wire	$3\frac{1}{8}$	" "
3d wire	$6\frac{3}{4}$	" "
Wire removed from middle lobe	$2\frac{1}{6}$	inches.
" " " anterior lobe	$2\frac{3}{8}$	" "
Nail " " " "	$2\frac{1}{4}$	" "
Needle " " middle " "	$1\frac{5}{8}$	inch.

There is no doubt that the presence of the above noticed bodies within the brain of this man would have been the *ultimate* cause of his death; still the fact of his carrying them, as he did, with apparent impunity, renders this case peculiarly interesting.

This man was strong, healthy, vigorous, intelligent, well informed, witty; and of kind, social qualities to the last; having a fine manly figure, a well-developed brain, weighing, after drainage of the first extreme congestion, fifty-six ounces.

ART. XIX.—*Successful Treatment of Simple Ranula Salivalis by Probing.* By WILLIAM KELLER, M.D., of Philadelphia.

THE few cases of simple ranula salivalis, which have come under my observation, were obviated by cutting out a small piece of the duct of Bartholine.

At the end of last September a married lady, 23 years of age, consulted me for this trouble. The tumour, situated on the left side, consisted of a pellucid, oblong sac, extending from about a line and a half of the frenulum of the tongue backwards to the sublingual gland, interfering to a considerable extent with mastication and speech. As the patient believed herself to be near the term of her first confinement, and being of a nervous disposition, she wished to postpone an operation. I explained to her that the operation was but trifling, and could be performed at any time without inconvenience. Thinking, however, over the nature of the difficulty, which was on the increase, it afforded me a favourable occasion to try to free the passage by probing. Therefore, finding at a short distance from the caruncle under the tongue a minute, round depression, I worked on it by gently turning, for a little while, between the thumb and forefinger, the pointed end of a probe. This retired, I perceived a moisture coming out of the depression, like in the normal state. The swelling was then very slowly decreasing, but four weeks after the duct had entirely contracted, and the parts had returned to their normal appearance.

I would like to recommend this simple manipulation in similar cases, as the most appropriate treatment.

ART. XX.—*Sequel to the Case of Habitual Constipation reported in the American Journal of the Medical Sciences for October, 1874.*
By THOMAS D. STRONG, M.D., of Westfield, New York.

MILTON BROOKS, aged 28, died at Irving, Chautauqua County, New York, Jan. 21st, 1876.

The last report of the case brought down the history of it to June 1, 1874. Since that time the frequency of dejections has increased, so that his habit has been from five to ten days, though he has gone a month or more once or twice.

Has had a good appetite most of the time, and for the past year has done more work than in any year before. A year ago he worked a team in railroad construction. He has increased in weight by adipose deposit. His last sickness was eight days, the attack being like those in former report, violent pain in stomach and bowels, vomiting, and after a short time diarrhœa.

Post-mortem was made seventeen hours after death by Drs. Rogers, of Dunkirk, Thompson, of Angola, and myself.

Rigor mortis well defined. Most marked appearance of body was its breadth at base of chest, the ribs being widely spread, in fact almost horizontal. The breadth at base of ribs was two inches greater than at superior spinous processes. The walls of abdomen had one inch of fat, and there was also a heavy deposit upon intestines, especially upon mesocolon. On opening chest and abdomen we found that the arch of the diaphragm extended high into the chest, one inch above level of the nipple. Lungs compressed into the upper and back part of the thorax, looking like lungs compressed by heavy pleuritic effusion. Heart healthy. Left kidney deformed by pressure, shaped like section of a pyramid; the right elevated three inches above natural position, both healthy in structure. Liver one-half larger than normal, otherwise appearing healthy; spleen somewhat enlarged; stomach healthy in size and texture.

Although he had diarrhœa, with profuse evacuations, during most of the eight days of his sickness, we emptied from the colon, after removing it, six quarts of semifluid fecal matter. The colon measured, undistended, six feet three inches in length, and thirteen inches in circumference. Two feet of the lower extremity were much thickened. The mucous membrane of the whole colon was intensely congested.

During the last two or three years of *partial* distension, there can have been but little return by the organs to their normal position or size.

(ARTICLE XXI.)

A CENTURY OF AMERICAN MEDICINE. 1776—1876.

II.

SURGERY.

By S. D. Gross, M.D., LL.D., D.C.L. Oxon., Professor of Surgery in the Jefferson Medical College of Philadelphia.¹

“According to this time it shall be said, what has God wrought?”

A CENTURY has elapsed since the American colonies, through their representatives in Congress, assembled in this city, absolved their allegiance from the British crown, and, after a struggle of seven years, attended with great sacrifice of blood and treasure, achieved their independence as a free and sovereign people. What the country has done since that eventful epoch, in the various pursuits and occupations of life, is a legitimate object of inquiry, especially at a moment when the Nation, now composed of forty millions of human beings, is about to celebrate its Centennial Anniversary, in a form intended to display, in the amplest manner, its mental and physical wealth. It is well that every profession once in a century should open its ledgers and examine its accounts to see how it stands with itself and with the world at large.

The progress of the arts and sciences is intimately associated with the intellectual development of the human race. No nation can be truly great, if unmindful of the sanitary condition of its citizens. Civilization and the arts of domestic life march hand in hand; as is the one, so necessarily must be the other, so indissolubly are they interwoven and bound together. The refined and cultured physician has been an object of the deepest interest in every enlightened age and country. Even the American savage, who cares little for his physical comforts in his native wilds, has his “medicine man” to ease him of his pains when overtaken by disease or accident. In ancient Greece and Rome, those great centres of civilization in the Old World, the physician was held in the highest esteem and veneration. The beautiful and complimentary remarks of Cicero are familiar to every classical scholar, and meet with a ready response in the heart of every right-thinking person. The praises of the surgeon have been sung in poetry and heralded in prose the world over, and there has been no important military enterprise since the first great battle was fought in freedom’s cause, in which he did not play a conspicuous part. If in the exercise of his humane duties, he does not always receive the plaudits of his countrymen, he never fails to obtain the approval of his own conscience, often the only reward coveted by true merit and unaffected

¹ The author tenders his acknowledgments to Professor Greene, of Portland, Professor Bell, of Louisville, Professor Johnston, of Baltimore, Dr. George A. Otis, and Dr. Harvey G. Brown, U. S. A., and Dr. Laurence Turnbull, Dr. William Thomson, and Dr. I. Minis Hays, of Philadelphia, for material embodied in this paper.

modesty. The examples of Ambrose Paré and of Baron Larrey afford striking illustrations of the happy influence which the military surgeon is capable of exerting over the minds of soldiers in times of war, in inspiring confidence in their leaders and in their own personal safety when struck down by accident or disease. When the father of French surgery appeared at Metz, invested by the army of Charles V., the soldiers, exhausted by hunger and fatigue, crowded around the great surgeon the moment they saw him approach, exclaiming, "we have no longer any fear of dying even if we should be wounded; Paré, our friend, is among us;" and the great Napoleon declared that Larrey, who followed him through all his campaigns, was the most honest and upright man he had ever known.

In considering the contributions which have been made by America to surgical art and science during the last hundred years, the object of this paper, it will be necessary to arrange them under different heads instead of presenting them in chronological order or historical sequence. In speaking of the honoured dead, I shall not confine myself to a mere enumeration of their labours, but append, whenever it may be convenient, brief biographical sketches, so as to place their true character more fully before the reader. Of the living I shall, for obvious reasons, say little, if anything, beyond what more immediately concerns their contributions to the general stock of American surgery. In carrying out this design it will be my earnest endeavour to do full justice to all my surgical brethren, in all sections of the country, engaged in the legitimate exercise of their profession; at the same time, however, it must be understood that the limits within which I am restricted will prevent me from entering into any minute details. It will be perceived that most of the prominent surgeons mentioned in this paper have been teachers in medical schools, and it is hardly necessary to add that they must have exercised more or less influence in moulding the surgical mind of the country. Not a few of them were the worthy peers of Roux, Lisfranc, and Dupuytren, of France; of Abernethy, Cooper, Brodie, and Lawrence, of England; of Cusack, Crampton, and Colles, of Ireland; of Bell and Syme of Scotland; of Graefe and Rust, of Germany, and of Scarpa and Porta, of Italy; men who in their respective countries stood head and shoulder in talent, influence, skill, and attainment, above most of their contemporaries.

Although this paper is designed to record the achievements of American surgeons, there are, strange to say, as a separate and distinct class, no such persons among us. It is safe to affirm that there is not a medical man on this continent who devotes himself exclusively to the practice of surgery. On the other hand, there are few physicians, even in our larger cities, who do not treat the more common surgical diseases and injuries, such as fractures, dislocations, and wounds, or who do not even occasionally perform the more common surgical operations. In short, American medical men are general practitioners, ready, for the most part, if well educated, to meet any and every emergency, whether in medicine, surgery, or midwifery. Of late, the specialists have seriously encroached upon the province of the general practitioner, and, while they are undoubtedly doing much good, it is questionable whether the arrangement is not also productive of much harm. The soundest, and, therefore, the safest, practitioner is, by all odds, the general practitioner, provided he is thoroughly educated, and fully up to his work.

The century under review opened with no great lights in practical

surgery. Although the Revolutionary War had furnished a large number of army surgeons, who rendered important service both on the field and in the hospital, there was not one among them who was entitled to the term great, in the sense employed at the present day. The nearest approaches to such a distinction were Dr. William Shippen and Dr. John Warren, the first professors, respectively, of anatomy and surgery in the University of Pennsylvania and Harvard College. Dr. Benjamin Rush acted at first as Physician, and afterwards as Surgeon-General to the Middle Division of the army, and doubtless discharged well the duties of his offices; but it must be remembered that he was educated as a medical practitioner, not as a surgeon, and there is no record which goes to show that he ever performed any of the great operations of surgery. Dr. James Tilton also rendered good service; but his special province seems to have been the supervision of hospitals, and, in a general way, the care of the sick and wounded. How active and energetic he was in the performance of his varied and responsible duties, and how thoroughly he had studied military hygiene, his little tract, entitled "*Economical Observations on Military Hospitals and the Prevention and Cure of Diseases incident to an Army*," published in 1813, at Wilmington, Delaware, sufficiently attests. It is proper to state that a portion of this tract was submitted, at the request of the Secretary of War, as a report to a committee of Congress, of which Robert Morris, the eminent financier of the Revolution, was chairman, and that it met with the warm approval of Government. There is reason to believe that Dr. Tilton's long, earnest and thoughtful services were instrumental in saving many lives. He was fully aware of the pernicious influences of hospitals, and he, therefore, availed himself, whenever practicable, of open tents for the accommodation of the sick and wounded. The motto of his tract was borrowed from Homer's *Iliad*:—

On mules and dogs the infection first began,
And last the baneful arrow fixed in man.

Tilton served during our late war with England, and died at an advanced age in 1822. Delaware may justly claim him as one of her most distinguished sons.

Rush, like Tilton, distinguished himself as a hospital physician, and during the war published a pamphlet embodying the results of his observations on the diseases of soldiers; a brochure widely disseminated and of great benefit to army surgeons. This great and good man died, in 1813, at the age of sixty-eight years. Dr. John Warren, whose active life began with the Revolutionary War, in which he was a Surgeon-General, died in 1815. His career was crowded with political events, and his name is indissolubly associated with the rise and progress of medical institutions in Massachusetts.

Two surgeons, of great name and renown, flourished contemporaneously with John Warren, although they were both by many years his juniors; while two others, destined to become equally illustrious, had just entered upon their brilliant career a short time before Warren died. These men, whose names are as familiar with the profession as household words, were Philip Syng Physick, born at Philadelphia in 1768; John Collins Warren, of Boston, born in 1778; Valentine Mott, of New York, born at Glen Cove, Long Island, in 1785; and Benjamin Winslow Dudley, of Lexington, Kentucky, born at Spottsylvania, Virginia, in 1785. Out of the loins of these men have issued, either directly or indirectly, many of

the great surgical practitioners of the past and present day in this country. Wright Post, a native of Long Island, a surgeon of great note in his day, was born two years before Physick, and died in 1822. He was appointed Professor of Surgery in the Medical College of New York in 1792, and performed many highly creditable operations.

John Syng Dorsey, a nephew of Physick, and a native of Philadelphia, was born in 1783. He was the author of the first treatise on surgery ever published in this country; a work in two volumes, extensively used as a text-book in our schools, and also for a considerable period in the University of Edinburgh. After having completed his foreign studies he settled in Philadelphia, where he soon acquired a large practice, and became one of the most popular men in the community. He contributed a number of valuable papers to the medical press, was the first in the United States to ligate the external iliac artery, and, at the time of his death, which occurred in 1818, before he had attained his thirty-fifth year, he was Professor of Anatomy in the University of Pennsylvania.

The name of Ephraim McDowell will be forever famous in the history of surgery as the originator of ovariectomy. Although a native of Virginia, he earned his reputation at the town of Danville, Kentucky, where he practised his profession from an early period of his life until the time of his death, in 1830, in the fifty-ninth year of his age. His medical education was acquired mainly in the University of Edinburgh, and in the lecture room of the celebrated John Bell, of whom he was a great admirer. His first case of ovariectomy occurred in 1809. He was a successful lithotomist, and commanded a large field of practice. The chaplet that should have been worn on his brow has been placed by a grateful profession upon his tomb.

One of the most extraordinary medical men whom this country has ever produced, whether we regard his great ability as a general practitioner, his skill and daring as a surgeon, or his versatility as a teacher of the different branches of medicine, was Nathan Smith, of New Haven, who, after a brilliant career, died in 1829, at the age of sixty-seven years. He was a native of Rehoboth, Massachusetts, a professor in Dartmouth, Yale, and Bowdoin colleges, and the author of a monograph entitled a *Practical Essay on Typhous Fever*. This wonderful man, a true pioneer in the cause of medical education, lectured early in life upon all the branches of medicine then taught at Dartmouth College, and enjoyed for a long time almost an unrivalled reputation as a surgeon, teacher, and general practitioner in the New England States. In his tract on fever he shows himself to have been a sagacious observer, thoroughly acquainted with the nature and treatment of the disease which he has so well described.

Dr. John Beale Davidge, a native of Annapolis, was the founder of the University of Maryland, in which he occupied for many years the chairs of anatomy and surgery. He enjoyed a high reputation as a teacher, and as a practitioner of medicine, surgery, and of midwifery. As a writer, he occasionally contributed to the periodical press; and he is said to have possessed a considerable amount of literary attainment. He died in 1829, at the age of sixty years, leaving behind him an enviable name.

George McClellan, a contemporary of Physick, Mott, Warren, and Dudley, was born at Woodstock, Connecticut, in 1796, and became distinguished early in life as a bold and dashing operator, and as a fascinating, enthusiastic, and instructive teacher. He was the founder of the Jaffer-

son Medical College of Philadelphia, in which he was the professor of surgery from 1825 until 1838, and the author of a work entitled *The Principles and Practice of Surgery*, edited as a posthumous production by his son, the late Dr. John H. B. McClellan. McClellan died in 1847, in the fifty-first year of his age.

Jacob Randolph, a man of prominence in his day, will be remembered chiefly in connection with his efforts to popularize lithotrity in this country, an operation in which he obtained considerable reputation as a skilful manipulator. Born in Philadelphia in 1796, he was for a number of years a hospital surgeon, and for a short time Professor of Clinical Surgery in the University of Pennsylvania. He contributed some valuable papers to the periodical press, and wrote an able and graphic memoir of his father-in-law, Dr. Physick. "Dr. Randolph," writes one of his biographers, "was endowed in a high degree with all the attributes of the great surgeon." His death occurred in 1848, in the fifty-second year of his age.

William Gibson, a native of Maryland, occupied the chair of surgery in the University of Pennsylvania from 1818 until 1854, when advancing age and bodily infirmity compelled him to resign. He was an accomplished lecturer, a lucid writer, an able operator, and the author of a work entitled *The Institutes and Practice of Surgery*, extensively used as a text-book in its day. Dr. Gibson had the good fortune to be the first surgeon that ever tied the common iliac artery, an operation which contributed greatly to the extension of his reputation.

Among the surgeons who occupied a conspicuous place in this country, as teachers and practitioners, during the middle of the present century, may be mentioned the names of Thomas Dent Mütter, Daniel Brainard, David Gilbert, George Hayward, and George W. Norris. Mütter, a native of Virginia, and for fifteen years Professor of Surgery in the Jefferson Medical College of Philadelphia, distinguished himself as a polished, forcible, and popular teacher, and as an able plastic surgeon. He died in 1859, leaving his surgical museum to the College of Physicians of Philadelphia, together with \$30,000 for its increase, and for the endowment of what is known as the Mütter lectureship in that institution. Brainard, born in 1812, in the State of New York, was the founder of Rush Medical College of Chicago, and for many years its professor of surgery. His essay on ununited fractures, in which he advanced some novel methods of treatment, received the prize of the American Medical Association, at its meeting at St. Louis, in 1854. A bold operator and a successful practitioner, he was an excellent teacher, an original thinker, and a good writer. He died in 1866, after having held for many years the leadership of surgery in the northwestern States of the Union. Gilbert, whose death occurred in 1868, at the age of sixty-five, was a native of Pennsylvania, and for a number of years Professor of Surgery in the Pennsylvania Medical College of Philadelphia. He was distinguished as a skilful operator, as well as an excellent general practitioner; and, although his surgical exploits were not numerous, they were of such a nature as to make his name widely known. Hayward, a contemporary and for many years a colleague of John C. Warren as Professor of Clinical Surgery at Harvard University, was one of the leaders of his profession in New England, enjoying a large reputation as an operator, and as a general practitioner. He was the first to make known among us the writings of Bichat, having translated his immortal work on

general anatomy, a task which of itself entitles him to no ordinary praise. Dr. Hayward was born in 1791, and died in 1863, at the age of seventy-three years. Dr. George W. Norris, a Philadelphian by birth and education, for many years surgeon to the Pennsylvania Hospital, will be remembered chiefly by his essay on ununited fractures, and by his statistics of the results of operations upon the larger arteries, of fractures, and of amputations, published originally in the *American Journal of the Medical Sciences*, and collected a short time before his death, in 1875, in an octavo volume entitled *Contributions to Practical Surgery*. Dr. Norris was for a short time Professor of Clinical Surgery in the University of Pennsylvania. His great forte was conservative surgery, in which he achieved some of his proudest triumphs.

To the above list must be added the name of John Rhea Barton, whose operative skill placed him, a third of a century ago, in the foremost rank of his contemporaries. Although he was essentially a mechanical surgeon, he was not the less an excellent diagnostician, and an able general practitioner. To him the profession is indebted for the invention of a valuable operation for the relief of ankylosis, mentioned in another part of this paper, and also for an admirable account of fracture of the inferior extremity of the radius, known as Barton's fracture. He was also the first to suggest the use of the bran-dressing, so useful in the treatment of compound fractures and dislocations of the leg, and he devised an excellent bandage for fractures of the lower jaw. As an expert lithotomist, he had few rivals in his day. After having been engaged for twenty years in active practice, Dr. Barton retired to private life, wealth, it is said, having allured him from his profession. He died in 1871.

Four New York surgeons deserve honourable mention in connection with the brilliant career of Valentine Mott, of whom all were contemporaries, if not at some time or another colleagues—Richard S. Kissam, J. Kearney Rodgers, Alexander H. Stevens, and John Watson, all hospital surgeons, and two of them excellent writers, one a distinguished teacher, and all able operators and skillful practitioners. It is said of Kissam, who died in 1822, that of sixty-five cases of lithotomy which passed through his hands only three proved fatal; a degree of success eminently creditable to his skill and judgment. J. Kearney Rodgers, born at New York in 1793, a pupil of Wright Post, and afterwards of Sir Astley Cooper, Travers, Abernethy, and Sir B. C. Brodie, founded, along with Dr. Edward Delafield, the New York Eye and Ear Infirmary, and was, for many years, one of the surgeons of the New York Hospital. He was distinguished for his great practical tact, his ability as a diagnostician, and his great adroitness and elegance in the use of the knife; but, above all, for his many manly and noble traits of character. His great operation, one which made his name known throughout the world, was the ligation, in 1846, of the left subclavian artery between the scalene muscles. His death occurred in November, 1857. Alexander H. Stevens, who died only a few years ago at a ripe old age, spent in retirement at his residence at Astoria, Long Island, distinguished himself early in life by his translation of a portion of Boyer's treatise on *Surgery*, and, subsequently, by the publication of several valuable surgical memoirs; he was one of the surgeons of the New York Hospital, and for a number of years professor of surgery in one of the New York medical colleges. As a clinical teacher, he enjoyed a high reputation, and was greatly beloved for his amiable and excellent qualities. John Watson, a native of Londonderry,

Ireland, where he was born in 1807, immigrated to New York at an early age, and soon became distinguished as an able practitioner, a classical scholar, an admirable writer, and an acute critic. He was for a long time surgeon to the New York Hospital, was a skillful operator, and was a copious contributor to the medical press, especially to the pages of the *American Journal of the Medical Sciences*. His *Medical Profession in Ancient Times*, published in 1856, is a highly creditable production. He had one of the largest and choicest collections of the works of the fathers of the profession in this country. Dr. Watson died at a comparatively early age.

To the above catalogue must be added the name of a distinguished surgeon, Dr. George Bushe, an Irishman, brought over to this country by the faculty of the Rutgers Medical College of New York, in 1828, as professor of anatomy in that school on the recommendation of Mr., afterwards Sir William, Lawrence. Bushe died young, leaving behind him a brilliant reputation as a bold, dashing operator, and as the author of the well-known standard monograph on the *Diseases of the Anus and Rectum*, long, if indeed not still, the ablest work on the subject in any language. He also published a memoir on staphylorrhaphy, and was the founder and editor of the *New York Medico-Chirurgical Bulletin*, an able journal of brief duration.

Granville Sharp Pattison, a name well known in America and Europe, was a Scotchman, and a pupil of Allan Burns, of Glasgow, the author of the great work entitled *Observations on the Surgical Anatomy of the Head and Neck*, of which he brought out an edition in this country. In 1820 he was appointed Professor of Surgery in the University of Maryland, and on retiring from that institution he occupied successively the chair of anatomy in the London University, in the Jefferson Medical College, and in the University of the City of New York. Although he was not a great surgeon, he was one of the ablest teachers of surgical anatomy of the age, and by his enthusiasm as a lecturer he had the happy faculty of inspiring his pupils with a love for surgery such as few men ever possessed. He contributed a number of valuable papers to our periodical literature, and was for some time one of the editors of the *Philadelphia Medical Recorder*. Dr. Pattison died at New York in November, 1851, aged sixty years.

Northern New England can boast of two representative surgeons, of great, if not unsurpassed, ability as practitioners and operators, both natives of New Hampshire, men of great renown, and of unsullied character. I allude to Amos Twitchell, of Keene, born in 1781, and Dixie Crosby, for many years the distinguished Professor of Surgery at Dartmouth College. Both of these men performed a vast amount of work in their day; they both possessed uncommon skill in the use of the knife; and such was the confidence reposed in their judgment, ability, and integrity, that patients flocked to them from all sections of the New England States for aid and advice, often in cases of great emergency and suffering, in which relief had been sought in vain in other quarters. Twitchell, whose life was closed in May, 1850, performed many bold and difficult operations; but the crowning glory of his life, as remarked by his biographer, Dr. Albert Smith, of Dartmouth, was the ligation of the primitive carotid artery in a case of secondary hemorrhage, a feat which he executed successfully in 1807, eight months prior to Sir Astley Cooper's famous case, supposed, until recently, to have been the first of its kind upon record. Of Dr. Crosby, whose recent death was so widely

deplored as a great loss to his country and his profession, nothing further need be said here, as the following pages bear ample testimony to his skill and judgment as a great surgeon.

Thomas Hubbard and Jonathan Knight, of New Haven; Alban Goldsmith, of New York; Horatio G. Jameson, of Baltimore; John Wagner, James Ramsay, and John Bellinger, of Charleston; Joshua B. Flint, of Louisville; P. C. Spencer, of Petersburg; Joseph Parrish, Joseph Hartshorne, Thomas T. Hewson, William E. Horner, and Thomas Harris, of Philadelphia, were well-known surgeons in their day, distinguished either as teachers, as operators and practitioners, or as contributors to our periodical literature. The popularity of Professor Knight, as a gentleman and an honoured member of the profession, was shown by his having been twice elected President to the American Medical Association, a compliment never before nor since accorded to any of its members. Dr. Hewson, a son of the celebrated London anatomist, was for nearly a third of a century a hospital surgeon. Dr. Harris was a naval surgeon, who late in life held the office of Chief of Bureau at Washington City. Among those who closed their earthly career, either quite recently or at a comparatively recent period, stand conspicuously the names of Horace A. Ackley, Reuben D. Mussey, and George C. Blackman, of Ohio; of Charles A. Pope, of Missouri; of J. Tyler Bradford, and James M. Bush, of Kentucky; of Thomas B. Buchanan, of Tennessee; of Warren Stone, of Louisiana; of Josiah C. Nott, of Alabama; of Charles Bell Gibson, Hugh Holmes McGuire, and John P. Mettauer, of Virginia; of Paul B. Goddard, John H. B. McClellan, and George W. Norris, of Pennsylvania; of Alden March, J. Murray Carnochan, Ernst Krackowizer, and James A. Armsby, of New York; and J. Mason Warren, and Winslow Lewis, of Massachusetts.

It is not probable that America will ever again produce four surgeons of equal renown with Philip Syng Physick, John C. Warren, Valentine Mott, and Benjamin W. Dudley, for the reason that it is not at all likely that an equal number of young practitioners will ever again be placed under equally advantageous circumstances for their development. When Physick commenced the practice of medicine in Philadelphia there was no surgeon of any prominence north of New York, and very few of any distinction even on that side of the line. He returned after an absence of four years with the prestige of foreign study, as a favourite pupil of the celebrated John Hunter, and he had hardly touched his native shore before there was a frightful outbreak of yellow fever in his own city, carrying off not less than 4000 of its inhabitants in 1793. Physick was at once appointed physician to the Bush Hill Fever Hospital, where, as well as in the city, then comparatively small, he was brought into contact with many prominent citizens, a circumstance highly favourable, one would suppose, to his speedy introduction into practice; and yet practice came so slowly that he for some time seriously contemplated abandoning the profession and settling upon a farm. Gradually, however, this chilling and discouraging feeling, so often experienced by the young aspirant after fame, wore off, and long before he had reached the meridian of life, he stood at the head of his profession as the first surgeon on the American continent. His appointment to the chair of Surgery in the University of Pennsylvania, in 1805, greatly promoted his interests, and was a means of attracting patients to him from all parts of the country. Upon the death of John Syng Dorsey in 1818, Physick was transferred from

the surgical to the anatomical chair, which he occupied until 1831, when advancing age and increasing physical infirmities compelled him to retire.

The Father of American surgery, a title well deserved because well earned, died in 1837, in the sixty-ninth year of his age, having only a short time before that event performed several important operations, among others that of lithotomy upon the venerable Chief Justice Marshall, from whose bladder he removed upwards of one thousand calculi. Physick has left no works to commemorate his fame or to record his vast experience, a few short papers in the medical press of the day comprising the whole of his contributions to the surgical literature of the country. In Dorsey's *Elements of Surgery* may be found an abstract of the experience of the first twenty-five years of his surgical practice. Physick was deeply imbued with the doctrines of his illustrious preceptor, John Hunter, and constantly advocated their importance in his lectures, thus contributing, in no small degree, to their dissemination and appreciation in this country, and, more or less directly, to the advancement of American surgery. As a surgeon, it may be truly said of Physick, what Dr. John Brown has said of Mr. Syme, that he never spilt a drop of blood uselessly, or, as a teacher, ever wasted a word.

John C. Warren was a son of John Warren, the first professor of anatomy and surgery in Harvard College, and a nephew of General Joseph Warren, who lost his life at the battle of Bunker Hill. On the death of his father, in 1815, he succeeded to his two chairs, which he occupied for upwards of a quarter of a century; he was for a long time surgeon to the Massachusetts General Hospital, and there was no medical man in the New England States who was so favourably known, or who commanded so wide an influence as an operator and general practitioner. From his aristocratic descent and his official relations, it is evident that John C. Warren had a sort of pre-emption right to the surgery, not only of Massachusetts, but of all the surrounding States. He was the author of a work on Tumours, was a large contributor to the periodical press, and was the first who ever administered ether as a preventative of pain in a surgical operation.

Valentine Mott, in the thirty-fourth year of his age, tied the innominate artery, a feat never accomplished before, and on waking up the next morning found himself "the observed of all observers." Other great operations followed in more or less rapid succession, and fame soon perched upon his brow, carrying his reputation into all parts of the civilized world. When Mott, after his return from Europe, settled in New York, his only surgical competitors, of any note, were Wright Post and Richard S. Kissam, good but not great surgeons. He had thus an open field, which he long successfully occupied, although latterly not without many able competitors, and even rivals, up to the time of his death in 1865.

B. W. Dudley, in 1810 went to Europe, where he availed himself of the instructions of Cline, Abernethy, and Cooper, in London, and of Boyer, Dubois, Larrey, and others in Paris. Bringing back with him French manners, which he affected during the remainder of his life, he settled at Lexington, Kentucky, then a small village, in 1814. Upon the organization of Transylvania University in 1819, he was appointed professor of anatomy and surgery, the latter position of which he held until the school was finally closed in February, 1850. Dudley early in his career had no competitor. Ephraim McDowell, a resident of Danville,

Kentucky, only 36 miles from Lexington, had, it is true, already performed ovariectomy several times as well as many other important operations, but the former of these feats, instead of enhancing his reputation, only served to bring him into ridicule, if not positive contempt, both at home and abroad. In all the great West and Southwest there was not one surgeon of commanding skill, talent or reputation. A great field here lay fallow, and Dudley soon, of necessity, became its occupant and its successful cultivator; so true is it that circumstances more frequently make men than talent and genius, or great and intrinsic merit. Dudley was a great advocate of protracted rest and low diet in the treatment of chronic inflammation, and of the bandage as a means of controlling swelling and muscular action in the treatment of wounds, fractures, and dislocations. Indeed, he might be said to have been the knight of the roller, so generally did he employ it, and so strongly advocate its utility. His disciples, less skilled in its application, of course committed many egregious blunders with it, causing much suffering with the occasional loss of a limb, and a suit for malpractice. Dudley expired in January, 1870, in the eighty-fifth year of his age, most of his time, since he delivered his last lecture, in 1850, having been spent in retirement, in a species of gradually increasing imbecility.

In connection with these men, who were the surgical autocrats of their day in this country, must be mentioned the name of Dr. Warren Stone, who, in point of reputation and professional pre-eminence, occupied the same position in the Southern States that they, respectively, did in the Eastern, Northern, and Western. Born at St. Albans, Vermont, February 8th, 1808, Stone settled early in life at New Orleans, where he soon acquired a degree of popularity seldom equalled in any walk of life. A man of talents and of wonderful kindness and benevolence, he was an attractive talker, and a boon companion, with a smile and a cordial shake of the hand for every one who approached him. The boatmen of the Mississippi and Ohio Rivers literally worshipped him. As he grew in reputation, nobody could be sick without having Stone, either as attending or consulting surgeon or physician. He was the great commoner in his day in the South; tall of stature, not particularly refined or elegant in his address, but so kind and winning in his manners as to inspire his patients with unbounded confidence in his ability and skill. The great secret of his success lay in his large heart and in the native powers of his mind, strong and well poised, but not at all cultured. When he passed away, in December, 1872, the Southern people mourned his loss as the loss of a household god. Stone has left no substantial memorial of his labours. His vast experience, as a surgeon and physician, is buried with his ashes. Authorship had no charms for him. He was not a great, much less a brilliant, operator; and, as a teacher of surgery, he was too erratic and too unsystematic to do justice to the chair which he held for a third of a century in the University of Louisiana. When he settled at New Orleans the only surgeon of any note was Dr. Charles A. Luzenberg, a man of elegant manners, an excellent scholar, and a brilliant practitioner, as well a dexterous operator, who died in 1847, thus leaving the field to his young rival, who had already for several years past been treading closely upon his heels.

All these men, and many others equally good, although not equally distinguished, have passed away. Had the lot of the very foremost of them been cast in our day, they would have had many competitors, and

not a few successful rivals in the race of fame. In short, they never would have attained such wondrous pre-eminence. If circumstances did not make them what they were, circumstances powerfully contributed to their development, and in giving saliency to their character. None of them were brilliant; none even uncommonly talented. The men now upon the stage have nothing to be ashamed of; educated more or less thoroughly, they are fully equal to their work, and are, in every respect, worthy successors in an age when science and skill occupy a much more exalted position than they did in the days of the Father of American Surgery.

In the *Surgery of the Bloodvessels*, America need not be ashamed of her achievements, of which some have certainly been eminently daring and brilliant. Commencing with that on the vessels of the neck, it may be stated that the common carotid arteries have been ligated in innumerable instances, both on account of hemorrhage in wounds of the cervical region and in their continuity for the cure of aneurism and of morbid growths. The first operation in which, on this continent, the primitive carotid artery was secured with a double ligature was performed in 1803, by Dr. Mason Fitch Cogswell,¹ of Hartford, Connecticut, the procedure having been rendered necessary during the extirpation of a "scirrhus tumour" of the neck, in which that vessel was deeply embedded. The ligature came away at the end of two weeks, and the man lived until the twentieth day, when he died exhausted from general debility, hastened by slight bleeding from a small vessel near the angle of the jaw. Dr. Cogswell, who was an army surgeon in the Revolutionary War, died in 1830. In its continuity, the artery, if I am not in error, was first tied in this country in 1813, by Wright Post,² of New York, in a case of aneurism, followed by the recovery of the patient. To Dr. Macgill,³ of Maryland, belongs the credit of having been the first to secure successfully both carotids, after an interval of one month, on account of a fungous growth in the orbit of each eye, the operations having been performed in 1823, four years after that of Dupuytren and Robert. Altogether, this procedure has been executed fifteen times on this side of the Atlantic, with the result of 11 recoveries, 2 deaths, and 2 failures. The operators were Macgill, Mussey, Mott, F. H. Hamilton, John Ellis, J. M. Warren, George C. Blackman, Reynolds and Van Buren, Willard Parker, J. R. Wood, J. C. E. Weber, J. M. Carnochan, and H. E. Foote. The causes necessitating the operations were, for the most part, epilepsy, erectile tumours, or malignant growths of the orbit of the eye. In Carnochan's⁴ case it was performed for the relief of elephantiasis of the neck, face, and ear. In one of Mott's cases,⁵ where the interval of the application of the two ligatures was only fifteen minutes, death ensued within twenty-four hours. In Dupuytren and Robert's case the interval was thirty-six years, a sufficient reason for excluding it from the list, as the parts had long ago accommodated themselves to the changes induced in the cerebral circulation by the first operation. Mott tied the common carotid artery altogether fifty-one times, in most of the cases successfully. During my pupilage in this city, in 1827, I assisted the late Dr. George McClellan in ligating this vessel in a child only five months old, on account of an immense *navus*

¹ N. E. Journ. of Med. and Surg., vol. xiii. p. 357.

² Am. Med. and Phil. Register, vol. iv. p. 366.

³ N. Y. Med. and Phys. Journ., vol. iv. p. 576.

⁴ Am. Journ. Med. Sci., July, 1867, p. 109.

⁵ Mott's *Velpeau*, edited by Blackman, vol. i. p. 597.

on the upper part of the face. The descending branch of the ninth pair of nerves was divided in the operation, as it interfered with the passage of the ligature. The infant speedily recovered, without, however, any material benefit as it respected the morbid growth. Mott,¹ in a similar case, tied the artery successfully, followed, it is said, by a cure of the aneurism, in a child only three months of age. A case was reported in 1857 by Dr. Gordon Buck,² of New York, in which, on account of a deep wound of the parotid region, a ligature was successfully applied by that gentleman simultaneously to the common and internal carotid arteries. Two examples of a similar kind have occurred since that period: one, in 1871, in which Professor W. T. Briggs,³ of Nashville, tied both these vessels, on account of secondary hemorrhage after an operation for the cure of a traumatic aneurism of the common carotid artery; and the other, in 1872, in which they were secured by Professor A. B. Sands,⁴ of New York, on the tenth day after excision of the left half of the lower jaw. Both patients recovered. In September, 1875, Dr. Donald Maclean, Professor of Surgery in Michigan University, Ann Arbor, in a case of traumatic aneurism, cut down upon the tumour, and, turning out the clots, tied the common carotid at both ends.

The innominate artery was approached for the first time with a ligature on the 11th of May, 1818, the operator being Dr. Valentine Mott. The patient was Michael Bateman, fifty-seven years of age, the subject of an aneurism of the right subclavian artery, the tumour being of large size, well marked, and the seat of much suffering. The artery was tied about half an inch below its bifurcation; the ligature was detached on the fourteenth day; on the ninth day there was some hemorrhage, and again on the twenty-third, but in larger quantity; and death occurred on the twenty-sixth day from exhaustion. The dissection revealed absence of occlusion, and extensive ulceration of the structures at the lower part of the neck, involving the innominate artery. Dr. Richard Wilmot Hall,⁵ of Baltimore, repeated the operation in 1830; in 1859 it was performed by Dr. E. S. Cooper, of San Francisco;⁶ and in 1864 by Dr. A. W. Smyth,⁷ of New Orleans, who at the same time ligated the common carotid artery. In this case, which finally, after repeated attacks of hemorrhage, terminated successfully, the fortunate result was manifestly due to the ligation of the vertebral artery on the fifty-fourth day after the primary operation. The particulars of Dr. Mott's case will be found in the *New York Medical and Surgical Register* for 1818, and also in Townsend's translation of Velpeau's *Operative Surgery*. This operation, which reflects imperishable credit upon Dr. Mott, as a skilful and daring surgeon, was performed before he had been thirteen years in active practice. Having made himself thoroughly familiar with the surgical anatomy of the neck, he had no hesitation in attempting it, satisfied that he possessed the requisite courage, judgment, and dexterity to complete it. The case of Dr. Smyth is replete in interest, not only as illustrative of extraordinary ability of the operator, but as showing how recovery may occasionally occur under, apparently, the most desperate circumstances.

¹ Am. Journ. Med. Sci., Nov. 1830, p. 271.

² Ibid., Jan. 1856, p. 267.

³ Nashville Journ. Med. and Surg., March, 1871, p. 103.

⁴ New York Med. Journ., Jan. 1874, p. 34.

⁵ Baltimore Med. and Surg. Journ., vol. i. p. 125.

⁶ Am. Journ. Med. Sci., Oct. 1859, p. 395.

⁷ Ibid., July, 1866, p. 281.

It is proper to add, that, in all the other cases, amounting to upwards of a dozen, in which the innominate artery was tied, the result was unfavourable, the immediate cause of death being secondary hemorrhage.

The subclavian artery has been repeatedly secured on the scapular aspect of the scalene muscles, both for the arrest of hemorrhage and the cure of aneurism. The first successful operation for the cure of aneurism, in this country, if not in the world, was performed by Dr. Wright Post¹ in 1817. The credit arising from the case is greatly enhanced by the fact that the operation, a very delicate one, had previously failed in the hands of such "master spirits in surgery," as Ramsden, Abernethy, and Cooper. Ligation of the subclavian artery on its tracheal aspect, originally executed by Mr. Colles, of Dublin, has, I believe, been performed only three times in this country, the surgeons being Valentine Mott,² J. Kearney Rodgers,³ and Willard Parker.⁴ Until the operation was done by Rodgers, such an attempt was universally regarded as impracticable on the right side for the relief of aneurism, from the close proximity of the vessel to the sac of the pleura and the intimate relations of the tumour with the thoracic duct and the great vessels and nerves of the neck. The patient succumbed under the effects of secondary hemorrhage on the fifteenth day. In 1863, Professor Parker,⁵ also in a case of aneurism, performed a similar operation, at the same time securing the common carotid and vertebral arteries, in the hope of thus effectually preventing the occurrence of secondary hemorrhage. Despite of this precaution, however, the patient died from this cause at the end of the sixth week. There are two cases, one in 1867 by J. C. Hutchison,⁶ of Brooklyn, and the other in 1868 by A. B. Sands,⁷ of New York, in which a ligature was placed in immediate succession upon the common carotid and subclavian arteries for aneurism of the innominate. An instance in which the carotid alone was secured for a similar disease occurred in 1867, in the hands of Dr. Addinell Hewson,⁸ of Philadelphia. Statistics go to show that ligation of the carotid alone is generally a more rapidly fatal operation than the simultaneous ligation of this artery and of the subclavian. Dr. Thomas G. Morton⁹ in 1866, in a case of spontaneous axillary aneurism at the Pennsylvania Hospital in a man fifty-one years of age, tied the left subclavian artery between the scalene muscles, the patient finally recovering, after amputation of the limb at the shoulder-joint, rendered necessary by sloughing of the tumour, followed on the forty-third day by secondary and frequently recurring hemorrhage, and eventually by mortification of the extremity.

Professor Pancoast, many years ago, suggested a more easy method than the one usually adopted for tying the subclavian artery below the clavicle, particularly applicable to cases of aneurism of the neck reaching so far down as to allow little space for exposing the vessel. The operation consists in opening the fissure between the sternal and clavicular attachments of the great pectoral muscle, when the former is cut across immediately below the collar-bone, and the artery is sought for and ligated.

Sir Astley Cooper, in 1817, executed the daring and brilliant feat of

¹ Trans. N. Y. Phys.-Med. Soc., vol. i. p. 357.

² Am. Journ. Med. Sci., Aug. 1833, p. 354.

³ Ibid., April, 1846, p. 541.

⁵ Am. Med. Times, March 5, 1864, p. 114.

⁷ Ibid., vol. 3, p. 531.

⁸ Penn. Hosp. Rep., vol. i. p. 219.

⁹ Am. Journ. Med. Sci., July, 1867, p. 70.

⁴ Ibid., April, 1864, p. 562.

⁶ Med. Record, vol. 2, p. 253.

ligating the abdominal aorta in a man thirty-eight years old, on account of an aneurism of the left iliac artery; and, although the case terminated fatally, it has induced a number of other surgeons to follow his example. In this country the operation was performed for the first and only time, in 1868, by Professor McGuire,¹ of Richmond, Virginia, the patient being a man thirty-six years of age, the subject of aneurism of the external and common iliac arteries, involving the lower portion of the aorta. Death occurred within eleven hours after the operation.

Ligation of the common iliac artery was first practised in 1812, by Dr. William Gibson,² of Baltimore, afterwards Professor of Surgery in the University of Pennsylvania, for the arrest of hemorrhage caused by a gun-shot wound of the abdomen. Death occurred on the fifteenth day, from gradual loss of blood. The first case in which the operation was performed successfully for the cure of aneurism was that of Dr. Mott³ in 1827. Among American surgeons who have tied this vessel for aneurism may be mentioned the names of Charles A. Luzenberg, Edward Peace, Warren Stone, A. J. Wedderburn, W. A. Van Buren, Stephen Smith, L. A. Dugas, Alban Goldsmith, William Hammond; and for the arrest of hemorrhage, those of Alfred Post, Willard Parker, and Gordon Buck.⁴ In the latter case, one of aneurism of the femoral artery, ligatures were successively applied to the femoral, profunda, external iliac, and common iliac. In Dr. Stone's⁵ case, fatal on the twenty-sixth day, the artery was included in a silver wire ligature, probably the first instance of the kind on record. In a case in the practice of the late Dr. George Bushe,⁶ Professor of Anatomy in Rutgers Medical College, New York, the right common iliac artery was successfully tied in a child only six weeks old on account of extensive telangiectasis of the perineum, genital organs, anus and rectum. The difficulties of such an operation, at so tender an age, were immense, and could only have been surmounted by the most consummate skill.

The internal iliac artery was first successfully tied in 1847 by S. Pomeroy White,⁷ of Hudson, afterwards of New York, for gluteal aneurism. Among other operators have been V. Mott, J. Kearney Rodgers, H. J. Bigelow, Gilman Kimball, and Thomas G. Morton.

The external iliac artery was tied for the first time in the United States in 1811 by John Syng Dorsey,⁸ in a case of inguinal aneurism, the patient making a good recovery. It was the eighth operation of the kind ever performed, the first having occurred in the hands of Mr. Abernethy in 1796. Ligation of the sciatic artery for aneurism of this vessel, and subsequently, on account of secondary hemorrhage, of the common iliac, has been practised by L. A. Dugas,⁹ of Georgia. Death followed on the fourth day. In a case of ligation of the external iliac, the aneurism adhered so firmly to the peritoneum that the operator, Wright Post,¹⁰ of New York, in order to separate it, was compelled to cut through that membrane, notwithstanding which the patient made an excellent recovery.

¹ Am. Journ. Med. Sci., Oct. 1868, p. 415.

² Am. Med. Recorder, vol. 3, p. 185.

³ Phila. Journ. of Med. and Phys. Sci., vol. xiv., p. 176.

⁴ Am. Journ. Med. Sci., July, 1860, p. 24.

⁵ Ibid., Oct. 1859, 570.

⁶ N. Y. Med.-Chir. Bulletin, vol. i. p. 55.

⁷ Am. Journ. Med. Sci., Feb. 1828, p. 304.

⁸ Eclectic Repertory, vol. ii. p. 111.

⁹ Southern Med. and Surg. Journ., Oct. 1859, p. 651.

¹⁰ Am. Med. and Phil. Reg., April, 1814, p. 443.

The gluteal artery has been tied twice in this country for the cure of aneurism; first by Dr. John B. Davidge, of Baltimore, and, secondly, by Dr. George McClellan¹ of Philadelphia. Both patients recovered, although they had lost much blood.

In my memoir of Dr. Mott, published in 1868, occurs the following paragraph in relation to the ligation of arteries by this wonderful surgeon:—

“No surgeon, living or dead, ever tied so many vessels, or so successfully, for the cure of aneurism, the relief of injury, or the arrest of morbid growths. The catalogue, inclusive of the celebrated case of the innominate artery, comprises eight examples of the subclavian artery, fifty-one of the primitive carotid, two of the external carotid, one of the common iliac, six of the external iliac, two of the internal iliac, fifty-seven of the femoral, and ten of the popliteal; in all one hundred and thirty-eight.”

The first successful cure of aneurism by digital compression occurred in 1847, in the practice of the late Professor Knight,² of New Haven. The case was one of popliteal aneurism. In two instances of subclavian aneurism, in the hands of J. Mason Warren,³ too far advanced for ligation, a cure was effected by direct compression of the sac, aided by the application of bags of ice.

Until a very recent period the idea was very common among surgeons, even the most enlightened and experienced, that the ligation of a vein, especially a large one, was almost uniformly productive of very grave consequences, occasionally followed by death. How utterly unfounded this opinion is, has been abundantly proved by the able and exhaustive statistical paper of Dr. S. W. Gross, of Philadelphia, published in the January and April numbers of the *American Journal of the Medical Sciences* for 1867.

The *metallic ligature* for the ligation of arteries, an American device, is much less frequently employed than, in my opinion, it deserves to be. Such a substance can, of course, never take the place of the ordinary ligature in the case of the smaller arteries, but for the larger trunks nothing could possibly be more eligible, especially when an operation is performed for the cure of aneurism, in which it is always very desirable to avoid suppuration, an occurrence which is almost inevitable when the common ligature is used from its tendency to act as a seton or foreign body. The metallic ligature is a non-irritant, and, if properly applied, is sure, in a sound artery, to become speedily encysted, remaining thus ever afterwards as a harmless tenant. This never happens with the ordinary ligature, which therefore never fails to keep up discharge until it is detached, whether its retention be short or long. The innocuous character of the metallic ligature was first satisfactorily demonstrated by the late Dr. Henry S. Levert, of Mobile, Alabama, while a student in Philadelphia, in a series of well-conducted experiments upon the inferior animals, performed at the suggestion of Dr. Physick, the results being embodied in his inaugural dissertation which was afterwards published, by order of the Faculty of the University of Pennsylvania, in the *American Journal of the Medical Sciences* for 1829. So far as my information extends, the late Dr. Warren Stone,⁴ of New Orleans, was the first to apply a wire

¹ Mott's *Velpcean*, edited by Blackman, vol. i. p. 795.

² *Am. Journ. Med. Sci.*, July, 1848, p. 255.

³ *Surgical Observations with Cases*, Boston, 1867.

⁴ *Am. Journ. Med. Sci.*, Oct. 1859, p. 570.

ligature to a human artery. The case, which occurred in 1859, was one of aneurism of the external iliac, for which he tied the common trunk of that vessel. In 1866, a similar operation was performed by Dr. C. H. Mastin,¹ of Mobile, upon the external iliac, for an inguinal aneurism; and about the same time I secured that vessel for a similar purpose. Since then I have applied the silver wire ligature to other arteries, and have had every reason to be satisfied with the results of the treatment. If surgeons only knew, or knowing, considered the advantages of the metallic ligature, I feel confident that it would be much more frequently, if not generally, employed. An account of a series of interesting experiments upon metallic ligatures, performed by Dr. Benjamin Howard, will be found in the *New York Medical Record* for 1868, and a paper illustrative of the same subject, by Dr. F. D. Lente, of Cold Spring, New York, in the *American Journal of the Medical Sciences* for April, 1869.

Dr. A. M. Pollock, of Pittsburgh, in 1859, conceived the idea of employing the wire loop as a substitute for the ligature, and he has adopted the method with great success in a number of amputations and other operations. The chief advantages which he claims for this treatment are, the more frequent union of the wound by the first intention, less danger of secondary hemorrhage, equal facility of application, and removal at the pleasure of the operator. The first case in which the wire loop was used by Dr. Pollock occurred in January, 1860. In an article in the *New York Medical Journal* for July, 1869, he has given an account of twenty-six amputations, in which this procedure was adopted, including forty-seven arteries, of which seventeen were femoral. Ingenious contrivances for suppressing hemorrhage have been devised by Professor N. R. Smith, of Baltimore, and Dr. S. F. Speir,² of Brooklyn. Of the intrinsic value of these different methods of treatment, it would be premature to attempt to form an estimate, as they have not been sufficiently tested, or sanctioned by the experience of the profession.

The practice of employing *animal ligatures* originated with Dr. Physick early in the present century, under the conviction that they would occasion much less irritation than ordinary ligatures, then, and still so much in use. The substance which he selected for the purpose was buckskin, cut into suitable strips, which were then rolled upon a marble slab to impart to them the requisite degree of hardness, roundness, and smoothness. Dr. Dorsey, after numerous experiments with various kinds of animal substances, performed at the instance of Physick,³ was induced to give the preference to French kid, divested of its coloured and polished surface; and such was his confidence in the safety of this material, when properly prepared, that he employed it in various amputations, and in a number of capital operations, always cutting off the ends close to the knot, and treating the wound as if no ligature had been used. He found that in the course of a few days the ligature was completely, or almost completely, dissolved in the wound without any detriment to the artery. Dr. Harts-horne, of Philadelphia, soon after, in a case of amputation of the thigh, tied up the bleeding vessels with strips of parchment. Dr. Horatio G. Jameson,⁴ of Baltimore, at a later period, employed the buckskin ligature. He found, as the result of his experiments upon dogs, sheep, and other animals, that, if properly managed, it soon becomes surrounded with a

¹ Am. Journ. Med. Sci., Oct. 1866, p. 580.

² Med. Record, April, 1871.

³ Eclectic Rep., vol. vi. p. 389, and Dorsey's Surgery, 2d ed., vol. i. Phila. 1818.

⁴ Medical Recorder, January, 1827.

cyst or capsule, which itself finally disappears through the agency of the absorbents. Dr. John Bellinger, of Charleston, and Professor Eve, of Nashville, have made more or less extensive use of the sinew of the deer. Whether the animal ligature has fallen into merited neglect, I will not stop to inquire; certain it is that it is seldom employed at the present day. I have myself always preferred the ordinary silk thread, well waxed, and firmly applied.

For taking up deep-seated arteries, when accidentally divided, Physick,¹ in 1794, suggested the use of a pair of curved forceps, holding in its jaws a short curved needle, armed with a silk ligature. He was led to this idea by the difficulty which he experienced in throwing a ligature around the internal pudic artery, a vessel which he had the misfortune to divide in his first case of lithotomy, performed with the gorget. A useful instrument for taking up deep-seated arteries in their continuity, as in the operations for aneurism, was devised, many years ago, by the late Drs. Parrish, Hewson, and Hartshorne of Philadelphia, and is usually known by their names.

Most surgeons of the present day are agreed that almost the only safe operation for the cure of *Varicose Veins* is subcutaneous ligation. The substance commonly preferred for this purpose is the metallic ligature, first employed, if I mistake not, nearly at the same time by Dr. Richard J. Levis, of Philadelphia, and Dr. Nathan Bozeiman, of New York, the former fastening the wire with a twist or knot, and the latter with his well-known button. Professor Eve, of Nashville, prefers the animal ligature, being of opinion that it is less likely to cause irritation than any other substance. He employs the same material in the treatment of varicocele. When this affection is accompanied by extraordinary elongation of the scrotum, he first retrenches the parts and then ligates the enlarged and tortuous vessels. With this view, after having pushed the testicle up to the inguinal ring, he seizes the redundant skin with a long, narrow pair of fenestrated forceps, and cuts it away with one sweep of the bistoury, taking care not to expose the vaginal tunic. The edges of the wound being transfixed with a number of pins, placed at suitable distances, the forceps are removed, when the enlarged veins are separated from the spermatic artery and deferent tube, and included in one animal ligature, drawn sufficiently tight to arrest the circulation. The wound is now closed with twisted sutures, made by fastening the pins, of which there are generally from six to a dozen, with threads passed around each in the form of the figure 8.

In connection with the subject of varicocele, it may be mentioned that one reason, probably, of the exemption of the right spermatic vein from this affection, is the presence at the opening of this vessel into the inferior cava of a distinct valve, first described by Dr. John H. Brinton,² of Philadelphia, no such arrangement existing on the left side.

In the treatment of *Fractures* of the long bones, we are, it may fairly be assumed, decidedly in advance of every other nation. One of the first improvements introduced into practice early in the present century was the modification of Desault's splint by Physick for the treatment of fractures of the leg and thigh. The original splint, as is well known, reached only to the level of the crest of the innominate bone. Physick, discerning its defective construction, prolonged the outer splint to the

¹ Dorsey's Surgery, 2d edit., vol. ii. p. 182.

² Am. Journ. Med. Sci., July, 1856, p. 111.

axilla, giving the upper extremity the form of a crutch, and inserting two mortise holes for the reception of the counter-extending band. The improvement thus made was marked. Within the last sixteen years a valuable addition, suggested by Dr. H. Lenox Hodge,¹ of Philadelphia, has been made to the long splint, consisting of a bar of wrought iron, furnished with movable bolts, and bent to the right or left, in accordance with the seat of the fracture. To the bar a long broad strip of adhesive plaster stretched along the front and back of the trunk, and arranged in a loop above, is fastened, and this, in turn, is secured to the chest by three horizontal bands. Thus constructed the apparatus is, probably, as perfect as any contrivance of the kind can possibly be. However this may be, it has now given way, in great measure, if not entirely, both in private and in hospital practice, to the admirable mode of treatment introduced in 1861 by Dr. Gordon Back,² of New York, in which long splints are entirely dispensed with, and the extension made with adhesive strips, fastened to the leg, and secured below the sole of the foot to a cord, playing over a pulley, and controlled by a bag of shot or other suitable contrivance, weighing from five to fifteen pounds, according to the age of the patient. The counter-extension is made with India-rubber tubing passed round the groin and perineum, and attached to the head of the bedstead.

The anterior splint, as it is named, of Professor N. R. Smith,³ of Baltimore, as a convenient and useful contrivance in the treatment of certain kinds of fractures of the leg and thigh, is well known, not only on this side of the Atlantic but in Europe. It is especially valuable in the management of compound fractures, and did excellent service during the late war on both sides of the line. A modification of Professor Smith's splint, much employed by our Western confreres, was devised some years ago by Dr. Hodgen,⁴ of St. Louis. An admirable splint, provided with a movable foot-board, and constructed upon the principle of the double inclined plane, was invented by Professor N. R. Smith⁵ early in his professional life, and is well adapted to cases of fracture of the leg and thigh, admitting of the suspension of the limb. The treatment of fractures of the lower extremity, in which the counter-extension is made by the weight of the body by raising the foot of the bedstead, originally suggested, I believe, by Dr. James L. Van Ingen, of Schenectady, is now much employed by American surgeons, and often answers where the more ordinary means fail.

In compound fractures of the leg, the bran-dressing, introduced by the late Dr. John Rea Barton,⁶ of Philadelphia, is an extremely valuable improvement, not only as affording a comfortable lodgment for the affected limb, but also as a means of preventing the contact of flies, and the decay and formation of larvae, so common in hot weather when this precaution is neglected. The bracketted splint, now so much employed in the treatment of compound fractures of the lower extremity, originated, if I mistake not, with Dr. A. Hays,⁷ of Indiana, who found it very useful in cases of gun-shot wounds of the leg and thigh during our war with Great Britain in 1812.

¹ *Am. Jour. Med. Sci.*, Apr. 18, 1870, p. 273.

² *Bull. N. Y. Acad. of Med.*, vol. I, p. 181.

³ *Magdalenian Va. Med. and Surg. Jour.*, Jan. 31, March, 1861.

⁴ *Am. Med. and Surg. Jour.*, Jan. 1861.

⁵ *Am. Med. and Surg. Jour.*, vol. 1, p. 15.

⁶ *Am. Med. and Surg. Jour.*, vol. 1, p. 15.

One of the most valuable improvements, purely American in its origin, introduced into the treatment of fractures, especially of fractures of the lower extremity, is the use of adhesive plaster as a means of extension and counter-extension, as well as of adjustment of the ends of the fragments. The first public notice of this method of treatment appeared in my work on the *Diseases and Injuries of the Bones and Joints*, published in this city in 1830. I had witnessed the beneficial effects of this mode of making extension in a case of complicated fracture of both bones of the leg in the hands of my first preceptor, the late Dr. Joseph K. Swift, of Easton, Pennsylvania, and I subsequently employed it in my own practice. Since that period the application of adhesive plaster, as a means of making extension and counter-extension, has become generalized, and it is seldom that it is entirely dispensed with in any case of fracture of the long bones of the lower extremity. Upwards of twenty years ago, in a communication in the *Philadelphia Medical Examiner*,¹ I called attention to the claims of priority for Dr. Swift in this mode of treatment, and at the same time stated that I had found in adhesive plaster an admirable dressing in fractures of the clavicle, ribs, and scapula. Notwithstanding this, Dr. Sayre, of New York, is usually credited with its origination.

The apparatus of the late Dr. Thomas Bond,² of this city, consisting of two splints, one of peculiar construction, stretched along the bones of the forearm, and provided with a knob for the accommodation of the hollow of the hand, is decidedly the best and most convenient contrivance that has ever been invented for the successful treatment of fractures of the inferior extremity of the radius or radius and ulna. The apparatus of Dr. George Fox, of Philadelphia, for the treatment of fractures of the clavicle did, for a long time, good service both in private and hospital practice, acting as a most valuable substitute for the complicated contrivance known as Desault's dressing. Of the many modifications of this apparatus, no particular mention need here be made, the most important, perhaps, being those of E. Bartlett, Richard J. Levis, and F. H. Hamilton.

The contrivances of John Rhea Barton and William Gibson for the treatment of fractures of the lower jaw, long maintained their place in the esteem of American surgeons, and were greatly in advance, in point of simplicity and efficiency, of those of European practitioners. Upon these contrivances, the apparatus of Dr. F. H. Hamilton is a decided improvement. The interdental splint, as it is called, devised almost simultaneously by Dr. Gunning, of New York, and Dr. Bean,³ of Georgia, is, I believe, a purely American invention.

Of fracture apparatus, fracture boxes, fracture beds, and fracture chairs, the fertile genius of American surgeons has furnished an abundant supply, much that is worthless, and much also that is eminently useful. The fracture beds of Jenks, Daniels, B. H. Coates, Addinell Hewson, and E. Cutter, are especially worthy of commendation, as is also the fracture chair of William H. Pancoast.

In the treatment of ununited fracture, the seton originally used in 1802, by Dr. Physick,⁴ enjoyed, for a long time, a world-wide reputation; and, although it is now less extensively employed than formerly, it is still, in

¹ Nov. 1852, p. 685.

² Am. Journ. Med. Sci., April, 1852, p. 566.

³ Richmond Med. Journ., Feb. 1866.

⁴ Phila. Journ. Med. and Phys. Sci., vol. v. p. 116.

many cases, an admirable remedy, worthy of all the praise once bestowed upon it. The method of perforating the ends of the fragments with a peculiar instrument, introduced in 1852, by Dr. Daniel Brainard,¹ of Chicago, may occasionally be beneficially employed. Connecting the fragments together with an iron screw, as practised by Professor Joseph Pancoast in 1857, and since by him and other surgeons, is an eminently ingenious device, deserving of the highest commendation on account of its efficiency and freedom from danger, especially in ununited fractures of the femur and of the humerus. After excision of the ends of the fragments in this form of accident, it is sometimes expedient to unite the raw extremities with wire, an operation originally suggested, I believe, by Horeau in 1805, but first successfully practised by the late Dr. J. Kearney Rodgers,² of New York. Dr. Henry J. Bigelow,³ of Boston, in 1867, published an account of eleven cases, all but one successfully treated by this method, great care having been taken to preserve the periosteum. I have myself treated a considerable number of cases in a similar manner. When exercise is required in the open air, as when the patient's health has suffered from general debility, loss of blood, or protracted confinement, or where all hope of effecting a cure has been abandoned, great comfort will be experienced from the use of the excellent apparatus invented by Dr. Henry H. Smith,⁴ of Philadelphia, and delineated in most of our treatises on surgery. In fracture of the tibia, attended with great overlapping or loss of substance, thereby rendering the limb comparatively useless, the fibula may occasionally be advantageously broken opposite to the original lesion, as suggested and successfully practised in several cases by Professor William H. Pancoast.

Children are liable to a form of injury of the osseous tissue, known as the green stick fracture, or as bending or incomplete fracture of the bones, the pieces most commonly affected being the ulna, radius, and clavicle. The humerus, femur, tibia, fibula, and ribs occasionally suffer in a similar manner, and even the bones of the head are not exempt from it. The first account of this singular lesion was from the pen of Professor Jurine, of Geneva, in 1810. The late Dr. John Rhea Barton gave a graphic description of it; illustrated by the narration of a number of cases, in the *American Medical Recorder* for 1821; and since that period the whole subject has received important additions from the labours of Professor Frank H. Hamilton, who has thoroughly investigated it in an elaborate series of carefully performed experiments upon the inferior animals, leaving nothing further to be desired upon this branch of surgical pathology.

- The reduction of *Dislocations* has been greatly simplified during the last twenty years, chiefly through the genius and influence of American surgeons. The pulleys, formerly so much in vogue, and deemed, in many cases, indispensable to success, have become almost obsolete instruments; and, as to Jarvis's adjuster,⁵ hardly any one thinks of employing it. These contrivances, thank fortune, have had their day. A new era has been inaugurated; science and common sense have taken the place of awkward and dangerous mechanical appliances, and the whole process has been rendered so simple that one is astonished that the revelation

¹ Northwestern Med. and Surg. Journ., March, 1852, p. 409.

² N. Y. Med. and Phys. Journ., vol. vi. p. 521

³ Ununited Fractures, Boston, 1867.

⁴ Am. Journ. Med. Sci., Jan. 1848 and Jan. 1876.

⁵ Lancet, 1846, vol. i.

was so long in coming. Reduction by manipulation is now the order of the day, not only in simple cases, but even in the most complicated, as well as in many of the more protracted. Although this method is spoken of by Hippocrates, and although it occasionally succeeded in the hands of some of the practitioners during the last two hundred years or more, it remained for our countryman, Dr. William W. Reid,¹ of Rochester, New York, by a series of admirably conducted dissections, experiments, and observations, to generalize the method, and to establish the universality of its application. The paper in which the results of his labours are comprised, was published in 1855, and earned for him a wide-spread reputation. Like Byron, he woke up one morning and found himself famous; for he had justly earned his laurels. It does not in the least detract from the merits of Dr. Reid, when I add that he fell into error in referring the chief resistance to the reduction of dislocations to the action of the muscles at and around the injured joint. In many instances, indeed, as is proved when the muscular system is completely relaxed by anæsthesia, the obstacle is evidently caused by the resistance offered by the ligaments, especially in the ball-and-socket joints, as those of the hip and shoulder. In the former of these articulations, as was first shown by Professor Gunn,² of Chicago, and Professor Moore, of Rochester, and more recently by Professor Henry J. Bigelow,³ of Harvard University, the obstacle to restoration is largely, if not exclusively, due to the manner in which the head and neck of the thigh-bone are girt by the untorn portion of the capsular ligament. These facts are clearly stated by all these surgeons, and they have been made the subject of a beautiful and valuable monograph by the Boston surgeon, published in 1869. Dislocations of many months' duration have, in a number of instances, been more or less readily reduced by manipulation alone. In denouncing the pulleys as a relic of barbarous surgery, I do not mean to deny that they may not occasionally be employed with advantage; but their day, as a general principle, is certainly over, and we have no regret at parting with them.

The practice of reducing dislocations by simple manipulation is by no means a modern expedient. Distinct mention of it occurs in the writings of Hippocrates and Paul of Ægineta; it was successfully employed in the last century by Turner, Anderson, and other English surgeons; and in the early part of the present by Physick, of Philadelphia, and Nathan Smith, of New Haven. The late Mr. Morgan, of Guy's Hospital, London, was accustomed, it is said, for many years to avail himself exclusively of this method, asserting that the use of pulleys was wholly unnecessary. To Dr. Reid, however, is unquestionably due the credit of directing to it the attention of the profession in such a manner as to lead to its general adoption.

Every surgeon has occasionally experienced great difficulty in reducing dislocations of the thumb and fingers, especially of the former. Professor Dixie Crosby,⁴ of New Hampshire, aware of this fact, adopted, in 1826, what was then a novel method, consisting simply in pushing the luxated phalanx forcibly back upon the metacarpal bone, until it forms a right angle with it, when, by strong pressure applied to its base from

¹ *Buffalo Med. Journ.*, Aug. 1851, page 123, and *N. Y. Journ. of Med.*, July 1855, p. 55.

² *New York Journ. of Med.*, Nov. 1853, p. 423.

³ *The Hip*, Bigelow, Phila. 1869.

⁴ *Am. Journ. Med. Sci.*, April, 1853, p. 401, and *Boston Med. and Surg. Journ.*, Oct. 1, 1857, p. 172.

behind forward, it is readily carried by flexion into its natural position. Some European writers have claimed this operation for Mons. Gerdy, of Paris, but its original suggestion justly belongs to Dr. Crosby. The spatha of Dr. Richard J. Levis,¹ of this city, is a contrivance of great power, well adapted to the reduction of dislocations of the thumb and fingers, and is a valuable improvement upon the more ordinary procedures.

In dislocations of the sterno-clavicular and acromio-clavicular joints great difficulty, amounting occasionally to impossibility, is experienced in preserving the contact of the articular surfaces. To meet this contingency I suggested, many years ago, the importance of connecting the parts with strong silver wire; an idea first carried successfully into practice by the late Dr. Cooper,² of San Francisco, and soon afterwards by Dr. Hodgen, of St. Louis.

The subject of congenital dislocations of the hip-joint was ably illustrated by the late Dr. Carnochan. In an exhaustive memoir, published in 1850, he gave an able account of the lesion, accompanied by the narration of a number of cases and dissections.

Excessive suffering is occasionally experienced in old, irreducible luxations of the shoulder-joint from the pressure of the head of the bone upon the brachial plexus of nerves. In a case of this kind, in 1869, in a woman fifty years of age, under the care of Dr. Edward Warren,³ formerly of Baltimore, prompt and permanent relief was afforded by the excision of the offending portion of bone.

To Professor L. A. Dugas,⁴ of Georgia, is due the credit of having pointed out, as early as 1856, a most valuable diagnostic sign of dislocation of the shoulder-joint. It is simply this, that, when the head of the humerus is thrown off from the glenoid cavity of the scapula, it is impossible for the patient, or the surgeon, to place the fingers of the injured limb upon the sound shoulder while the elbow touches the front of the chest.

The difficulty of effecting reduction in dislocations of the elbow backwards, in cases even of comparatively recent standing, is well known to surgeons. In several cases of this kind, in the hands of Dr. F. H. Hamilton⁵ and Dr. Lewis A. Sayre, the object was readily attained by the subcutaneous division of the triceps muscle; and Dr. Waterman,⁶ of Massachusetts, and myself have been equally successful by the method of forcible extension of the forearm.

In the cure of *Bony Anchylosis*, the world is indebted to American surgeons for several operations of an extremely ingenious character, since practised, more or less extensively, and more or less successfully in all parts of the world. Foremost among these operations is that of Dr. John Rhea Barton,⁷ originally performed in 1826, by cutting out a V-shaped portion of the superior extremity of the femur in a sailor, aged twenty-one years, who had lost the use of his hip-joint from the effects of a fall on shipboard. Passive motion was instituted at the end of three weeks, and steadily maintained for four months, when the man

¹ Am. Journ. Med. Sci., Jan. 1857, p. 62.

² Ibid., April, 1861, p. 389.

³ Baltimore Med. Journ., Sept. 1871, p. 532.

⁴ Southern Med. and Surg. Journ., March, 1856, p. 131.

⁵ Hamilton, Fractures and Dislocations, 5th ed., p. 635, Phila. 1875.

⁶ Bost. Med. and Surg. Journ., N. S. vol. iv., 1869.

⁷ North Am. Med. and Surg. Journ., vol. iii. pp. 279, 400.

had so far recovered as to be able to walk about with the aid merely of a cane. Eventually, however, the use of the artificial joint was completely lost. In 1844, Dr. Gurdon Buck¹ modified the operation of Barton by attacking the affected joint itself. The case was one of ankylosis of the knee-joint, from which, after cutting through the skin and muscles, and dissecting up the flap, he sawed out a V-shaped portion, extending nearly through the entire thickness of the femur, leaving indeed merely a little layer behind, which was then broken, when the limb was placed upon a double inclined plane, in an easy posture, at a suitable angle for future usefulness. An operation based essentially upon that of Barton, or, in other words, involving precisely the same principles, was suggested by Brainard,² of Chicago, and performed, in 1859, by Professor Joseph Pancoast,³ the patient, a youth, making eventually, notwithstanding the formation of several abscesses and the occurrence of great constitutional trouble, a good recovery with a useful limb. The operation, performed for osseous ankylosis of the knee-joint, consisted in perforating the femur with a large gimlet, through a single opening in the skin, at half a dozen points, immediately above the articulation, and then forcibly breaking the bone. The procedure, it will be perceived, was a subcutaneous one. Dr. Brainard, in 1860, divided the femur through its condyles with a perforator; and, in 1861, I severed the connection between the articular extremities of the knee with the aid of a narrow chisel.⁴ The operation thus performed is, I am warranted in declaring, perfectly free from danger, and should, in my opinion, founded upon the results of four cases, supersede every other devised for the purpose. Professor Sayre,⁵ in 1862, in a case of bony ankylosis of the hip-joint, removed a segment of the femur above the small trochanter, and thus established a false joint, followed by a good use of the limb.

America, if I mistake not, may claim priority in operations for the relief of ankylosis of the lower jaw. Dr. Carnochan, of New York, upwards of twenty years ago, in a case of this kind, in addition to the division of the masseter muscle, cut out a wedge-shaped portion of the body of the bone, according to Dr. Barton's principle, in order to form an artificial joint; the operation, however, proved to be a failure, and he, therefore, suggested, under similar circumstances, the removal of the entire half of the bone. In April, 1873, in a case of true ankylosis of the left temporo-maxillary joint, in a girl seven years of age, I excised the corresponding condyle of the bone, with the result of complete restoration of the movements of the jaw. The operation, in which I was kindly assisted by Drs. Levis, Barton, Hearn, and others, consisted in making a curvilinear incision in front of the ear, and after separating the condyle from its connections with the surrounding structures cutting it away with the pliers and chisel. Hardly any blood was lost; and, with the exception of a slight attack of erysipelas, the recovery was rapid and in every respect most satisfactory.

In the treatment of *Affections of the Joints*, American surgery stands pre-eminent. Physick, impressed with the great importance of complete and protracted rest in the management of this class of diseases, early in

¹ Am. Journ. Med. Sci., Oct. 1845, p. 277.

² Trans. Am. Med. Assoc., vol. vii. p. 537.

³ Am. Journ. Med. Sci., April, 1868, p. 360.

⁴ Ibid., April, 1868, p. 360.

⁵ Trans. N. Y. State Med. Soc., 1863, p. 103.

To relieve the violent *inflammation* which occasionally occurs in the lower extremities, as in erysipelas, gunshot wounds, compound fractures, and compound dislocations, a very bold operation, consisting in the ligation of the femoral artery, was performed in 1813 by Dr. Henry M. Onderdonk,¹ of New York. The case was one of wound of the knee-joint, which had resisted all the usual means of treatment, but readily yielded to the remedy in question after grave fears had been entertained respecting the safety of the limb. In 1824 the operation was repeated by David L. Rogers,² also of New York, upon a man thirty years of age, with results equally gratifying. From this time on nothing more was heard of this method of treatment until 1866, when it was revived, apparently without any knowledge that it had been done before, by Professor Henry F. Campbell, of Georgia, then a surgeon in the Confederate army. In an article in the *Southern Journal of the Medical Sciences*, he called the attention of the profession to the subject, and adduced a number of cases, chiefly of gunshot injuries of the bones and joints, in which it is stated to have yielded highly gratifying results. The only European surgeon, so far as I know, by whom ligation of the femoral artery has been practised for this purpose, is Mr. C. F. Maunder, of London, his case being one of violent inflammation of the limb, consequent upon a gunshot wound of the knee-joint. Of the value of this procedure nothing definite can, at present, be said, as the number of instances in which it has been employed is too limited to justify any positive opinion. One would suppose, judging from the results of general experience, that the usual depletory remedies, early and vigorously employed, and followed up by punctures, scarifications, and incisions of the affected structures, would, in almost every case, be sufficient to arrest any inflammation, however intense, without a resort to a measure, apparently, so fraught with danger as the ligation of the main artery of a limb.

The first application of the *trephine* for the relief of inflammation and abscess of bone, or inflammation of bone threatening to pass into necrosis, is generally ascribed to Sir Benjamin C. Brodie. The credit of priority, however, is justly due to Professor Nathan Smith,³ of New Haven, who performed the operation as early as the latter part of the last century. In Nov. 1838 his son, the late Dr. T. Morven Smith, reported, in the *American Journal of the Medical Sciences*, four cases, illustrative of the importance of the operation, in every one of which matter issued freely from the affected bone, although only a few days had elapsed since it was invaded by the disease. Of the nature of this mode of treatment in this class of affections it is impossible to form too high an estimate. Unfortunately it is seldom resorted to; or, if employed, the operation is performed too late to be productive of much benefit. For some valuable remarks upon the pathology and treatment of this affection, with an account of the history of the operation, the reader is referred to an able article by the late Professor G. C. Blackman, in the *American Journal of the Medical Sciences*, for October, 1869.

Few subjects have been more closely or more thoroughly studied in this country than *Amputations*, and we accordingly find that the names of a considerable number of our surgeons are associated with "methods" of operating, either peculiar to themselves or modifications of the proceedings

¹ Am. Med. and Phil. Reg., vol. iv. p. 176.

² N. Y. Med. and Phys. Journ., vol. iii. p. 453.

³ Phila. Monthly Journ. of Med., June and July, 1827.

of others. Dr. John Warren,¹ a surgeon in the Revolutionary Army, and the first Professor of Anatomy and Surgery at Harvard University, was the first in this country, as far as my information extends, to remove the arm at the shoulder-joint, the operation having been performed in 1781. Amputation at this joint for gunshot injury was practised for the first time in 1813, by Dr. William Ingalls, of Boston. To Dr. Walter Brashear,² of Bardstown, Kentucky, belongs the honour of having led the way in amputations at the hip-joint. The case, which occurred in 1806, was a peculiar one. The thigh was at first removed in its continuity, but, as the bone was diseased in its entire length, it was disarticulated, and the patient, a lad seventeen years old, made an excellent recovery. The next case, also a successful one, in the United States, was that of Dr. Valentine Mott,³ in 1824. To these names may be added those of Buck, May, Bradbury, Van Buren, Joseph Pancoast, Paul F. Eve, S. D. Gross, J. Mason Warren, G. C. Blackman, J. H. Packard, Addinell Hewson, T. G. Morton, Whitcomb, Fauntleroy, William S. Forbes, D. H. Agnew, George A. Otis, and Frank F. Maury. In some of these cases the disarticulation was effected secondarily, some time after amputation of the thigh in its continuity. Pancoast and myself each had two primary cases, followed by recovery. The only successful example of primary amputation at the hip-joint, performed during the late war on account of gunshot injury, was that of Dr. Edward Shippen,⁴ of Philadelphia. Dr. J. Mason Warren was the first Boston surgeon to remove the thigh at the hip-joint. Valuable statistics of this amputation have been published by Dr. Stephen Smith⁵ and Dr. George C. Blackman.⁶ The prevention of hemorrhage during this operation has always been a great desideratum with the surgeon, and happily, alike for science and humanity, this object was fully attained in Professor Pancoast's⁷ first case, by the compression of the abdominal aorta by means of a modification of Signorini's tourniquet, an expedient the credit of which was unjustly claimed by our English cousins for Mr. Lister, of Edinburgh. The first operation in which this instrument was employed was performed in June, 1860, at the Pennsylvania Hospital.

Amputation at the knee-joint was originally performed in 1581, by Fabricius Hildanus, and in this country for the first time, in 1824, by Professor Nathan Smith,⁸ of New Haven, his patient making a prompt and thorough recovery. Velpau made an attempt to revive the operation, and with this view, in 1830, published an elaborate paper, comprising an account of a number of successful cases in commendation of it. In this country the procedure has been warmly lauded by Dr. Thomas Markoe,⁹ of New York, and by Dr. John H. Brinton,¹⁰ of Philadelphia, whose efforts have been greatly instrumental in promoting the generalization of the operation, by giving assurances, founded upon personal observations, of its comparative immunity from danger, and of its

¹ Boston Med. and Surg. Journ., vol. xx. p. 210.

² Mott's Velpau's Surgery, edited by Blackman, vol. ii. p. 270.

³ Phila. Journ. Med. and Phys. Sci., vol. xiv. p. 101.

⁴ Circular, No. 7, S. G. O., Washington, 1867.

⁵ N. Y. Journ. of Med., Sept. 1852, p. 184.

⁶ Western Lancet, vol. xvii., p. 7.

⁷ Am. Journ. Med. Sci., July, 1866, p. 22.

⁸ Am. Med. Rev., Dec. 1825, vol. ii. p. 370.

⁹ New York Journ. of Med., Jan. 1856, p. 9.

¹⁰ Am. Journ. Med. Sci., April, 1858, p. 305.

superiority over amputation of the thigh in its continuity. Of 164 cases of amputation at the knee-joint, tabulated in 1868 by Brinton, 53 were fatal, affording thus a mortality of about 32 per cent., or from one-fourth to one-sixth less than in amputation of the limb above the articulation. Of these cases 117 occurred in the practice of American surgeons. The method of operation usually adopted in this country is that by anterior and posterior flaps. The employment of lateral flaps has been strongly recommended by Stephen Smith,¹ of New York, on the ground that the resulting stump is better adapted for drainage and less liable to injury from the pressure of the artificial limb. A case occasionally occurs, as in gunshot and other lesions, in which as many as three flaps may be required, as in several instances in the hands of Professor Pancoast.

Amputation of the ankle-joint was performed in this country for the first time in 1851 by myself with the aid of Professor Granville Sharp Pattison, before the medical class of the University of New York, during my connection with that school as Professor of Surgery, in the case of a young girl, the subject of caries of the tarsal and of some of the metatarsal bones. A good recovery followed; but, owing to a return of disease, amputation of the leg was subsequently performed. The operation devised by Pirogoff, of Russia, a modification of that of Syme, has occasionally been successfully performed by our surgeons with the result of an excellent stump. Dr. Addinell Hewson,² of Philadelphia, has been particularly fortunate with his cases, several of which he has kindly afforded me an opportunity of inspecting. Chopart's amputation has also been repeatedly performed, and leaves in the main a better stump. In the cases in which I have had occasion to employ it, the result has been highly gratifying.

Amputation at the elbow-joint, now an accredited operation, was first performed on this side of the Atlantic in 1812 by Dr. Mann, U. S. A.,³ during our late war with Great Britain. The operation leaves an excellent stump, and is less dangerous than amputation in the continuity of the arm, the same rule applying here as in amputation at the knee-joint in relation to the thigh.

Synchronous amputation is occasionally demanded in severe mutilation of the extremities consequent upon gunshot, railway, and other injuries. Examples of this kind, often followed by rapid recovery, have occurred within the last fifteen years in the practice of a number of our surgeons, as Carnochan, Eve, Seiler, S. W. Gross, Warren Stone, and John G. Koehler. The case of the latter is one of the most remarkable upon record, the operation involving the immediately successive removal of both legs and one arm, in a lad thirteen years of age, who made a speedy recovery.

The good luck which occasionally attends upon ordinary amputations in the hands of a skillful and judicious surgeon is well exemplified in the practice of Professor Eve. In a paper in the second volume of the new series of the *Southern Medical and Surgical Journal*, this gentleman reports fourteen consecutive successful amputations of the thigh and leg, and fifty-one amputations in general without a single loss.

Amputation above the shoulder-joint, involving the removal of the superior extremity along with the clavicle and scapula, was first performed in this country, in 1836, by the late Dr. Dixie Crosby, Professor of Surgery

¹ Am. Journ. Med. Sci., Jan. 1870, p. 33.

² Ibid., July, 1864, p. 121.

³ Med. Repertory, 1822, N. S., vol. vii. p. 17.

at Dartmouth College, New Hampshire. The morbid growth, belonging to that class of tumours then and long afterwards denominated osteosarcomatous, measured thirty-seven inches in circumference at its widest part. Little blood was lost in the operation. The patient, a man thirty years of age, made a rapid recovery, but died twenty-eight months afterwards from an attack of paraplegia, due, as was conjectured, to malignant deposits in the lumber region of the spine. An abstract of this interesting case was communicated to me in 1870 by the distinguished operator, and a full account of it was published in the *New York Medical Record* for November, 1875, by his son Dr. A. B. Crosby, Professor of Anatomy at Bellevue Hospital Medical College.

An operation similar to that of Dr. Crosby was performed, in 1837, by Dr. Reuben D. Mussey, then of Hanover, New Hampshire, and afterwards of Cincinnati, Ohio; in 1838, by Dr. Amos Twitchell, of Keene, New Hampshire; in 1838, by Dr. George McClellan, of Philadelphia; and, in 1845, by Dr. David Gilbert, Professor of Surgery in the Medical Department of Pennsylvania College, Philadelphia. In Mussey's¹ case the removal of the scapula and clavicle was a secondary operation, performed five years after amputation of the arm at the shoulder-joint. In Gilbert's² case the body of the scapula and the greater portion of the collar-bone were retained. It is not positively certain that the entire clavicle was removed in the cases of Crosby and Twitchell; in that of McClellan a small portion was left, whereas in that of Mussey it was disarticulated at its junction with the sternum. The only instance of amputation above the shoulder-joint, antedating that of Professor Crosby, was one performed, in 1830, by Gaetani Bey, of Cairo, but this was a traumatic one, in which, after disarticulation at the shoulder-joint, the scapula was dissected out along with the projecting extremity of the clavicle; a very easy task as compared with the removal of these structures when involved in an enormous morbid growth. Dr. Gardon Buck, of New York, in 1864, amputated the scapula and a part of the collar-bone in a case in which the arm had been removed by a previous operation. From this brief historical sketch of these exploits it is evident that Dr. Crosby, who was for many years Professor of Surgery at Dartmouth College, and for a long time one of the leading surgeons of New England, is justly entitled to priority in an operation which reflects so much credit upon our country.

In *Excision of the Bones and Joints* no country has a better record than ours. Indeed, it is in this field that many of our surgeons have achieved some of their most brilliant triumphs. Commencing with the extirpation of the clavicle, we find that this bone was removed by Dr. Mott,³ in 1828, in its entirety, on account of a sarcomatous enlargement, measuring four inches in diameter at its base. The operation lasted nearly four hours, and was one of the greatest possible delicacy, requiring, as is apparent from the size and situation of the tumour, an extraordinary amount of skill for its successful execution. Upwards of forty vessels were secured. The patient made an excellent recovery, and with the aid of an apparatus constructed for the purpose obtained a good use of his arm. Excision of this bone for similar reasons has been executed by John C. Warren, Cooper, Curtis, Eve, Palmer, and others. Dr. Charles McCreary,⁴ of Kentucky, in 1813, excised the clavicle at its articulations for scrofulous

¹ Am. Journ. Med. Sci., Feb. 1838, p. 390.

² Ibid., Oct. 1847, p. 360.

³ Ibid., Nov. 1828, p. 100.

⁴ Gross' History of Kentucky Surgery, p. 180.

caries; and similar operations have been performed by Wedderburn, Blackman, Fuqua, and other surgeons. As a brilliant and daring exploit, the case of Dr. Mott is without a parallel in the annals of surgery.

The scapula has been repeatedly removed, by the surgeons of this country, generally on account of sarcomatous or enchondromatous disease; the principal operators having been Mussey, of Cincinnati, Gross, of Philadelphia, Hammer, of St. Louis, Rogers, of New York, and Schnuppert, of New Orleans. In the cases of Hammer and of Rogers,¹ the excision was effected at two periods; in the first after the lapse of a few days, in the second of a few months.

With excision of portions of the ribs of greater or less length, are associated the names of a number of American surgeons, among whom may be especially mentioned John C. Warren, George McClellan, William Gibson, and William A. McDowell.² In the latter case the sixth and seventh ribs were disarticulated at their connection with the vertebræ; the only one of the kind, I believe, on record. I have myself done a good deal of work in this direction. The sixth volume of the *Philadelphia Journal of the Medical and Physical Sciences* records a remarkable case, in which Dr. Milton Antony, of Georgia, alleges to have removed the fifth and sixth ribs, which were extensively carious, along with two-thirds of one of the lobes of the right lung; the patient surviving the operation nearly four months.

Excision of the coccyx, performed as early as 1832, by Dr. Josiah C. Nott,³ of Mobile, Alabama, on account of a neuralgic affection now known as coccydynia, was a pioneer operation, highly creditable to the originator. The bone, hollowed out into a mere shell, and the seat of severe and intractable suffering, was disarticulated at the second joint and carefully detached from its ligamentous and muscular connections. Although the wound was slow in healing, the patient, a lady, twenty-five years old, eventually completely recovered. Since that time the operation has been repeated in a number of instances, always with excellent results: a full account of it was published by the late Sir James Y. Simpson, of Edinburgh, to whom has occasionally been erroneously awarded the credit of having been the first to suggest and to perform it.

The only cases of excision of the head of the humerus claiming attention in a paper like this, are those reported by Professor Warren (*vide* p. 452), formerly of Baltimore, and lately in the service of the Khedive of Egypt, and of the late Professor Blackman, of Cincinnati, in the former of which this bone was removed, in 1868, on account of the pressure which it produced upon the axillary plexus of nerves, caused by downward displacement; and in the latter, in which, in 1870, it was excised for a similar reason on account of arthritic enlargement. Both operations were successful in relieving the excruciating pain, for the relief of which they were performed. Practically these two cases present great points of interest as examples for imitation in similar lesions. Excision of the elbow-joint, originally executed by the elder Moreau, in 1794, was first performed in this country by Dr. John C. Warren,⁴ in 1834. Of excision of the wrist-joint I am unable to say who led the way. Dr. Robert B. Butt,⁵ of Virginia,

¹ Am. Journ. Med. Sci., Oct. 1868, p. 359.

² Am. Med. Recorder, vol. xiii., 1828, p. 113.

³ Am. Journ. Med. Sci., Oct. 1844, p. 544.

⁴ Hodges, Excision of Joints, p. 64.

⁵ Phila. Journ. Med. and Phys. Sci., vol. x. p. 115.

excised the lower two thirds of the ulna in 1825; the entire bone was removed by Dr. Carnochan,¹ of New York, in 1853; by Dr. C. T. Muscroft,² of Cincinnati, in 1870; and by Dr. Joseph C. Hutchison,³ of Brooklyn, in 1873. The entire radius was excised by Carnochan⁴ in 1854; and a few years afterwards a similar operation was performed by Professor Choppin, of New Orleans. Both these bones, with the exception of the inferior extremity of the former, were removed, in 1853, by Dr. Compton,⁵ of New Orleans. All these cases made good recoveries with useful limbs. The olecranon process was excised by Dr. Gordon Buck⁶ in 1842, on account of chronic hypertrophy of its substance interfering with the functions of the elbow-joint.

Excision of the hip-joint, originated by Mr. Anthony White, of London, in 1822, was first performed in the United States by Professor Henry J. Bigelow,⁷ of Boston, in 1852. Since then it has become a very common procedure, especially for the cure of coxalgia, Professor Sayre, of New York, alone having executed it fifty-nine times, with a degree of success reflecting the highest credit upon his judgment as a practitioner, and upon his dexterity as an operator. Of these cases thirty-nine were alive at the close of 1875, with a good use of the corresponding limb. Excision of the great trochanter was first performed among us by Professor Willard Parker. Excision of the knee and ankle-joints has not been often practised by our surgeons, and I am unable to state who is entitled to priority. A case of resection of the entire tibia for fibro-cartilaginous degeneration of that bone was reported, in 1858, by Dr. A. R. Jackson,⁸ now of Chicago. The calcaneum has been removed by Carnochan, Morrough, Greenleaf, McGuire, and others; the astragalus, by Peace; the calcaneum and astragalus, by T. G. Morton; the calcaneum and cuboid bone, by J. T. Bradford, of Kentucky. Professor H. J. Bigelow, in 1855, cut away all the tarsal bones, excepting the astragalus and calcaneum, together with the head of the second and third metatarsal bones; and, in 1874, Professor P. S. Conner,⁹ of Cincinnati, resected the metatarsus, anterior tarsus, and portions of the astragalus and calcaneum, followed by recovery with a useful foot.

Trephining of the skull for the cure of epilepsy was originally performed by La Motte, and revived by Cline, of London, in the early part of the present century. In this country the operation seems to have been first performed by Professor Dudley, of Lexington, Kentucky, who, in 1829, published an interesting article upon the subject in the first volume of the *Transylvania Journal of Medicine*, in which he detailed the particulars of five cases, of which three were entirely relieved, the first having occurred in 1819. In the eleventh volume of the *American Journal of the Medical Sciences*, the same surgeon has a paper on the "Use of the Trephine in Epilepsy," being, as he states, his sixth successful case. Dr. John G. F. Holston, of Ohio, has reported seven cases, in one of which a cure was effected after twenty years of suffering. Dr. J. T. Gilmore, of Mobile, has had five cases, with three cures and two deaths, the latter having been attended with the loss of some cerebral

¹ Am. Med. Monthly, March, 1854.

² Cin. Lancet and Obs., Aug. 1870, p. 449.

³ Am. Journ. Med. Sci., Jan. 1874, p. 96.

⁴ Mott and Blackman's Velpeau, vol. ii. p. 460.

⁵ Am. Journ. Med. Sci., April, 1843, p. 297.

⁶ Ibid., Oct. 18'8, p. 357.

⁷ Ibid., April, 1858, p. 363.

⁸ Ibid., July, 1852, p. 90.

⁹ Ibid., July, 1875, p. 86.

substance. A number of examples have been reported in which our surgeons trephined the skull and tied the carotid artery for the cure of this disease. In some of these cases both the common carotids were secured after a variable interval. Of the utility of trephining in certain forms of epilepsy there can be no doubt; but that the operation, however well performed, is generally one of great danger, is equally true. Of four cases in my hands the result in three was fatal. For valuable statistical facts relative to this operation the reader is referred to instructive papers, by Dr. Stephen Smith,¹ of New York, and Dr. J. S. Billings, U. S. A., in the *Cincinnati Lancet* for June, 1861.²

Puncture of the head for the cure of hydrocephalus has been repeatedly performed by American surgeons, Physick³ being one of the first, if not the first, to undertake it on this side of the Atlantic, his case having occurred in 1801. Dr. L. A. Dugas,⁴ of Georgia, has reported a case in which he tapped a child's head seven times, and evacuated sixty-three ounces of water, the patient surviving nearly four months. Physick was of opinion that the operation would be more likely to terminate favourably if it was performed without the aid of compression, the puncture being made very small, so as to allow the water to drain off very gradually.

Dr. Amasa Trowbridge,⁵ of Watertown, New York, in 1829 reported three cases of hydrorachitis successfully treated, one with the knife, and the others with the wire ligature. Mott, Nott, Sayre, and several other American surgeons, have been equally fortunate with excision. In an instance in the hands of Dr. Charles Skinner,⁶ of North Carolina, a tumour of this kind was punctured seventy times without any bad effects. The treatment of the late Dr. Brainard,⁷ of Chicago, for the cure of this affection, is well known; he published a number of successful cases, but, it must be confessed, the remedy in the practice of others has been, for the most part, a signal failure.

Trephining of the vertebræ in cases of fracture and dislocation has been repeatedly performed, but in no instance with any permanent benefit. One of the first of these operations in America was that of Dr. John Rhea Barton, soon followed by those of Alban Goldsmith and J. K. Rodgers, and, more recently, by those of Blackman, Potter, Hutchison, Stephen Smith, and others.

America may justly claim the honour of having led the way in extirpations of the *upper jaw*. Small portions, it is true, had been chipped off in the eighteenth and even in the seventeenth century; but the first grand and difficult operation of the kind of which we have any knowledge, was performed in 1820, by Dr. Horatio G. Jameson,⁸ of Baltimore, who took away nearly the entire bone on one side, the roof of the antrum alone being left, as it was not involved in disease. Resection of both bones, a still greater triumph of surgery, was first performed in 1824, by David L. Rogers,⁹ of New York, who carried his incisions as far back as the anterior limits of the pterygoid processes of the sphenoid bone, his

¹ New York Journ. of Med., March, 1852, p. 230.

² See Am. Journ. Med. Sci., July, 1861, p. 299.

³ Phila. Journ. Med. and Phys. Sci., vol. xiii. p. 316.

⁴ Am. Journ. Med. Sci., Aug. 1837, p. 533.

⁵ Boston Med. and Surg. Journ., vol. i. p. 753.

⁶ Am. Journ. Med. Sci., Nov. 1836, p. 109.

⁷ Ibid., July, 1848, p. 262.

⁸ Am. Med. Rec., vol. iv. p. 222.

⁹ New York Med. and Phys. Journ., vol. iii. p. 361.

patient, like that of Jameson, also making a good recovery. Since the feasibility of these procedures was thus established, excision of the upper jaw has been performed in many hundred cases both in this country and in Europe, and long ago took its place among the approved operations in surgery. I have myself on several occasions removed the entire upper jaw along with considerable portions of the palate and sphenoid bones; and I have been present on several occasions in which Professor Joseph Pauca¹ performed a similar operation. Very considerable portions of the upper jawbone have been removed by some of our surgeons without any external incision in the cheek, Dr. William E. Horner¹ having, I believe, been the first to make such an effort.

In regard to excision of the lower jaw, the first case upon record is that of Dr. Deaderick,² of Tennessee, who, in 1810, removed a section of the bone extending from near its angle to the centre of the chin, on account of a morbid growth, now generally supposed to have been an enchondroma. The result was a complete success, the patient surviving the effects of the operation many years. Unfortunately for the reputation of Dr. Deaderick, no account of this operation was published until 1823; a circumstance which for a time enabled other surgeons to bring forward their supposed claims to priority. The honour of performing the more bold and formidable operation of disarticulating this bone, and sawing it off at the chin, belongs to Valentine Mott,³ who achieved it in 1821. In 1823, Dr. George McClellan⁴ removed all that portion of the bone immediately anterior to its two angles. In the *New York Journal of Medicine* for 1850, a case is reported in which Professor Ackley, of Cleveland, Ohio, is said to have successfully excised the entire bone on account of osteosarcoma, the patient being in good health two years after the operation. In the *American Journal of the Medical Sciences* for 1831, Dr. John Rhea Barton has described a case in which, on account of a so-called epulis, he excised a longitudinal section of the lower jaw, leaving the base of the bone as a means of preserving the contour of the face. Dr. James R. Wood,⁵ of New York, in 1856, successfully removed the entire bone on account of phosphorus disease.

For the relief of false ankylosis of the lower jaw depending upon permanent contraction of the masseter muscle, caused by inordinate ptyalism, at one time so common in this country, subcutaneous division of the muscles in question was formerly practised; the operations for this purpose having been inaugurated almost simultaneously by J. W. Schmidt,⁶ of New Orleans, and Mott and Carnochan,⁷ of New York. To facilitate the restoration of the joint, and prevent recurrence of the contraction, Mott,⁸ Barton, and other American surgeons employed forcible dilatation by means of screws and levers, ingenious modifications of the instrument originally devised by Scultetus.

The difficult operation of extirpating the *parotid gland*, long considered as impracticable, has been repeatedly performed in the United States, the first instance having occurred in the hands of Dr. John War-

¹ Med. Examiner, Jan. 1850, p. 16.

² Am. Med. Recorder, vol. vi. p. 516.

³ New York Med. and Phys. Journ., vol. i. p. 385.

⁴ McClellan's Surgery, p. 365.

⁵ New York Journ. of Med., May, 1856, p. 301.

⁶ Am. Journ. Med. Sci., Oct. 1842, p. 516.

⁷ Mott's Velpeau by Townsend, vol. ii. p. 20, appendix.

⁸ Am. Journ. Med. Sci., Nov. 1829, p. 102.

ren,¹ of Boston, in 1804. The late Dr. Geo. McClellan,² of Philadelphia, performed the operation altogether nearly a dozen times, and the brilliant results attending his cases exerted a powerful influence in generalizing the procedure by inspiring surgeons with confidence in its feasibility. Doubtless some of the cases that have been reported as excisions of the gland were cases simply of morbid growths developed upon its surface or embedded in its substance; but that most of them were genuine examples of extirpation is sufficiently proved by the high character of the respective operators. The names of such men as Valentine Mott, George Bushe, N. R. Smith, William E. Horner, J. Mason Warren, Joseph Pancoast, H. H. Toland, and Frank H. Hamilton, not to cite others of great respectability, is a sufficient guarantee that they are capable of forming a correct estimate of what they see and do; in other words, know what they are about. The day for denying the possibility of such an operation is long since passed. The procedure, however, is certainly one of the most difficult in surgery.

Partial excision of the *tonsils* has superseded the removal of these organs with the double canula, practised fifty years ago. Most of our surgeons, if I mistake not, perform the operation with the volsella and probe-pointed bistoury, but there are some who still prefer the ingenious tonsilotome originally devised by Physick³ in 1828, and modified by Gibson, Hosack, Fahnstock, Rogers, Cox, Mitchell, and other practitioners. When the enlarged tonsil is very brittle and unusually vascular, a condition not unfrequently followed by more or less copious hemorrhage, removal should, if possible, be effected by crushing with the tonsil écraseur, or chain instrument, suggested for this purpose by Dr. S. W. Gross, of Philadelphia. To Dr. Alexander E. Hosack, of New York, is usually ascribed the credit of having first called the attention of the profession to excision of the tonsils with the knife, his paper upon the subject having been published in the *American Journal of the Medical Sciences* for Feb. 1828.

In carcinomatous, sarcomatous, and other tumours of the tonsils, extirpation of the diseased mass, when this is deemed proper, is usually performed through the mouth, notwithstanding its well known difficulties, large portions of the morbid growth being often left behind in consequence. In a case of encephaloid of the tonsils under the care, a few years ago, of Dr. Cheever,⁴ that gentleman attained his object by working his way through the upper and lateral parts of the neck. The operation, the first of the kind, if I mistake not, upon record, and one which reflects great credit upon the skill and intrepidity of the Boston surgeon, necessitated the division of the stylohyoid and styloglossal muscles, together with the separation of the fibres of the superior constrictor of the pharynx, through the interspace of which the diseased mass was approached and removed. Twelve ligatures were applied. The wound was completely closed at the end of a month, unpreceded by any untoward occurrence.

Numerous ingenious instruments for the extraction of foreign bodies from the œsophagus have been devised by American surgeons. The forceps invented by the late Dr. Thomas Bond,⁵ of this city, are widely

¹ Surgical Observations on Tumours. Warren, p. 257.

² McClellan's Surgery, p. 333. ³ Am. Journ. Med. Sci., Feb. 1828, p. 116.

⁴ First Med. and Surg. Reports, Boston City Hosp., p. 390.

⁵ N. A. Med. and Surg. Journ., vol. vi. p. 278.

known, and have served as models for the various modifications now before the profession in this and other countries. Dr. Physick,¹ early in his professional life, constructed a stomach tube for removing poisons from the stomach without being aware he had been anticipated by Dr. Monro, of Edinburgh.

Cesophagotomy has been repeatedly performed. For the relief of organic stricture of the œsophagus it was, if I mistake not, first performed in this country by the late Dr. John Watson, of New York. The case is reported at length in the *American Journal of the Medical Sciences* for 1844. Dr. David W. Cheever,² of Boston, has performed the operation three times successfully for the removal of foreign bodies in this passage; and in 1867 it was performed with equally fortunate results by Dr. Alfred Hitchcock,³ of Fitchburg, Massachusetts.

For the removal of fibroid tumours of the nose, very severe, difficult, and bloody operations are not unfrequently necessary. In a case of this kind, in which an immense fibroid growth filled the entire nostril and dipped far down into the pharynx, Dr. Mott,⁴ in 1811, succeeded in effecting complete riddance by approaching the morbid mass through an opening in front of the face made by dividing the nasal and maxillary bones. The operation, one of the most extensive and intricate of the kind ever performed, and the first of the kind ever done in this country, was followed by the most gratifying results. A case in which a large fibroid polyp was successfully removed from the base of the cranium through the hard and soft palate by Professor Paul F. Eve, is recorded in the *Southern Medical and Surgical Journal* for 1836. The patient was alive and doing well twenty years after the operation.

It is a singular fact that men, living in different countries, without intercommunication, occasionally effect simultaneous, or coincident discoveries or inventions. This seems to have been the case in regard to *staphylorrhaphy* or palate suture, first methodized by Roux, of Paris, in 1819, and performed the following year by Dr. John C. Warren,⁵ of Boston, without any knowledge that it had previously been attempted in Europe. Such an occurrence can readily be believed when it is recollected that at the time adverted to, the intercourse between this country and Europe was comparatively infrequent, and knowledge traversed the Atlantic Ocean only at long intervals. However this may be, Dr. Warren deserves great credit for the simplicity and efficiency of his operation. The second case of *staphylorrhaphy* is said to have occurred in the practice of Dr. George McClellan in 1823, and the third in that of Dr. Alexander H. Stevens, of New York, in 1826. Since that time it has been performed by most of our distinguished practitioners, but by none so frequently as by the late Dr. J. Mason Warren, of Boston, who, up to 1860, a few years prior to his death, had had 100 cases. It has been generally believed that Sir William Ferguson was the first to call attention to the importance of dividing the muscles in the arches of the palate as a means of facilitating the reunion of the edges of the fissure, but it is now well ascertained that this credit belongs to Dr. J. Mason Warren, who published an account of the procedure in the *New England Quarterly Journal of Medicine and Surgery* for April, 1843, thus antedating the paper of the

¹ Am. Med. Recorder, vol. x. p. 322.

² Cesophagotomy, Cheever, Boston, 1868.

³ Boston Med. and Surg. Journ., July 16, 1868.

⁴ Am. Journ. Med. Sci., Jan. 1842, p. 257, and Jan. 1843, p. 87.

⁵ Ibid., Nov. 1828, p. 1.

British surgeon by at least eighteen months. Be this as it may, the importance of this suggestion has, judging from my own experience, been greatly exaggerated; for it is only in cases attended with excessive width of gap that the measure is at all necessary, either as it respects the promotion of reunion of the borders of the opening or the subsequent improvement of speech. Numerous instruments, some of them of a very ingenious and useful character, have been devised for facilitating the different steps of the operation, among others by Dr. William Gibson, of Philadelphia, Dr. A. E. Hosack, and Dr. George Bushe, of New York, and Dr. Mettauer, of Virginia.

Dr. William S. Forbes recently called attention to a new operation devised by him for the cure of "Certain Cases of Cleft Palate" attended with fissure of the uvula. His account of the procedure, illustrated by drawings and two successful cases, will be found in the *Transactions of the College of Physicians of Philadelphia* for 1875.

In a paper in the *St. Louis Medical and Surgical Journal* for January, 1875, Dr. Prince, of Jacksonville, Illinois, has thrown out certain suggestions designed to facilitate the performance of staphylorraphy and to insure its more perfect success. The three new points which he claims are, the employment of the galvano-cautery, the introduction of what he styles automatic needles, and a new interpretation of the functions of the muscles in the pillars of the fauces, the division of which he declares to be not only useless but positively injurious.

Palatoplasty, uranoplasty, or staphyloplasty is an operation designed to close any opening, congenital or accidental, that may exist in the horizontal plates of the palate and maxillary bones. The operation was originally suggested and first practised by J. Mason Warren, who published an account of it in the *New England Quarterly Journal of Medicine and Surgery* for 1843. Of his success a good idea may be formed when it is stated that of twenty-four cases only one failed. Speech, deglutition, and local comfort were more or less improved in nearly every instance, although in several the loss of substance was unusually great.

Amputation of the *tongue* for the relief of congenital hypertrophy of that organ was performed for the first time, in the United States, by Dr. Thomas Harris,¹ of Philadelphia. Five years afterwards he repeated the operation, which, since that period, has been executed by different surgeons, most of the cases having made a good recovery. In an instance recently in charge of Professor N. R. Smith,² of Baltimore, the operation was successfully performed with a stout silk ligature.

Extirpation of the tongue for the relief of malignant disease has been practised, with more or less success by a number of American surgeons, among others by Dr. J. T. Gilmore, of Mobile, who has reported the particulars of four cases.

For the cure of salivary fistule, whether the result of injury or of pyalism, an ingenious operation was devised by the late Professor W. E. Horner,³ of Philadelphia, consisting in making an opening with a sharp punch while the cheek is firmly pressed against a strong spatula held on the inside of the mouth, and then uniting the edges of the wound in the skin with several points of twisted suture, thus compelling the salivary fluid to resume its natural direction.

¹ Am. Journ. Med. Sci., Nov. 1830, p. 17.

² Ibid., April, 1875, p. 429.

³ Smith's Surgery, Phila. 1863, vol. ii. p. 161.

Cheiloplasty and genioplasty, operations performed for the restoration of the lips and cheeks, are greatly indebted for many of their most successful applications to the genius and labours of Mott, Pancoast, Mütter, Hamilton, Buck, and others. The most remarkable results have followed the efforts of some of these distinguished surgeons in cases, apparently, at first sight, of the most unpromising character.

Extirpation of the *thyroid gland* on account of hypertrophy, cystic enlargement, or malignant disease, is very justly regarded as one of the most difficult and dangerous of operations; difficult because of the delicacy and importance of the structures involved, and dangerous because, first, of the excessive bleeding so liable to attend it, however carefully executed, and, secondly, the intensity of the resulting inflammation of the air-passages. For these reasons it is seldom undertaken. The first case of this kind in this country occurred, in 1807, in the practice of Dr. Charles Harris, of New York. The tumour, separated by enucleation, was a large one, and, although the deep-seated parts of the neck were extensively denuded, the patient rapidly recovered without any bad symptoms. The late Professor Blackman, of Cincinnati, reported one successful case; and in 1871 Dr. W. Warren Greene,¹ of Portland, published an account of three examples in which he was equally fortunate. In two of these the tumours were of great size, the weight of one being estimated at five pounds. From a letter recently received from Dr. Greene, I learn that he has extirpated the thyroid gland altogether in seven instances, with five recoveries and two deaths. Dr. F. F. Maury,² of Philadelphia, has had two cases of extirpation of goiterous growths, one followed by recovery, the other by death.

For the relief of hydropericardium *paracentesis* is occasionally required, and, although the operation has been repeatedly performed, both in this country and in Europe, it is believed that the first successful case was one which occurred in the hands of Dr. John C. Warren,³ of Boston. Velpeau, who was thoroughly acquainted with the history of the operation, in his great work on surgery, expresses the opinion that it was, at the time at which he wrote, the only instance of the kind worthy of entire credence. The operation was performed with a small trocar and canula through the sixth intercostal space, the quantity of serum evacuated being between five and six ounces.

Thoracentesis for the removal of accumulations of serum or sero-purulent fluid in the pleural cavity deserves passing notice here on account of the great success which has attended its performance in the practice of that distinguished physician, Dr. Henry I. Bowditch, of Boston, who was the first on this side of the Atlantic to illustrate the great value of the operation. Indeed, it is not too much to say that he has done more by his labours and writings to diffuse a knowledge of the importance of thoracentesis than all other practitioners together. In a letter with which Dr. Bowditch recently favoured me, dated November 30th, 1875, he informs me that he had performed the operation 325 times, the number of his patients being 205. Dr. Bowditch is evidently master of the field in Massachusetts; indeed, I am not aware that any other practitioner, either in America or in Europe, can show such vast statistics. Of his success I am unable to speak, but it has been highly flattering, and his

¹ Am. Journ. Med. Sci., Jan. 1871, p. 80.

² Ibid., Jan. 1873, p. 281.

³ Smith's Surgery, Phila. 1863, vol. ii. p. 258.

regret in common with most physicians and surgeons is that the operation is too often employed as a *dernier ressort*, when, as most generally happens, there is no chance whatever of permanent relief. The instrument used by Dr. Bowditch¹ is a small exploring trocar, to which, at the suggestion of Dr. Morrill Wyman, of Cambridge, he attaches, when necessary, a suction apparatus, similar to the ordinary stomach pump, thus literally anticipating Dieulafoy by nearly a quarter of a century in the employment of what is now known as the aspirator. In speaking of the operation, Dr. Bowditch remarks: "It was aspiration, pure and undiluted, and no mere assertion can make it different." In the thoracentesis of former times a much larger instrument was used, and the surgeon generally waited for "pointing." In the modern operation, which has been proved to be as innocuous as it is simple and satisfactory, the fluid is drawn off as early as possible. The instrument is easily introduced, without any liability of admitting air, or of leaving any fistulous opening. The place selected for the puncture, when practicable, is the back, in the eighth or ninth intercostal space, below the scapula, on a line with its inferior angle.

To the late Dr. Horace Green, of New York, the profession is indebted for having paved the way in this country in the treatment of the surgical affections of the *larynx*.² He was the first among us to demonstrate the possibility of applying nitrate of silver to this tube for the cure of inflammation, and considering that this was done years before the invention of the laryngoscope, he deserves not a little credit for his efforts to popularize this mode of medication, the value of which is now universally acknowledged. To Dr. Green also, to Dr. Gurdon Buck, and to Dr. Willard Parker, great credit is due for their contributions to the advancement of our knowledge of morbid growths of the larynx, and what were considered at the time the best means of removing them. The instrument of Dr. Buck³ for incising the lips of the mouth of the larynx in œdema of the glottis is well known.

The treatment of Wounds of the *Intestines* has long been an object of interest with practitioners. In this country the first attempt to place it in its true light was made by Dr. Thomas Smith, in his Inaugural Essay on "Wounds of the Intestines," presented for the degree of Doctor of Medicine in the University of Pennsylvania in 1805. This was followed, in 1812, by the treatise of Mr. Benjamin Travers, of London; and, in 1843, by my *Experimental and Critical Inquiry into the Nature and Treatment of Wounds of the Intestines*. This work was founded upon nearly seventy experiments upon dogs, instituted with a view of determining, if possible, the best mode of management in this particular class of lesions. Without going into details, it will be sufficient to state, as the legitimate conclusions from these researches, first, that all wounds of the bowels, however small, and of whatever direction, are almost inevitably followed by fecal effusion, unless sewed up before the parts are restored to the abdominal cavity; and, secondly, that the simple interrupted suture, made with a delicate, well-waxed silk or flax ligature, placed at a distance of a line and a half apart, and tied into a double knot, with the ends cut off close, answers, as a general rule, far better than any of the more complicated plans described in our works on surgery. These facts

¹ Am. Journ. Med. Sci., Jan. 1852, p. 103, and April, 1852, p. 320

² Vide Am. Med. Monthly, April, 1854, p. 241.

³ Am. Journ. Med. Sci., Jan. 1840, p. 249.

are now so well proved that they should be accepted as established principles of practice. As another deduction from these experiments, I ascertained that all penetrating wounds of the abdomen must be treated with the deep suture, passing close down to the peritoneum, otherwise, when the patient recovers, hernia will be inevitable. This circumstance is now well known, but it was not known a third of a century ago, when these experiments were performed.

In connection with this subject it may be stated that, in several cases of strangulated hernia, attended with gangrene of the intestine, occurring in the practice of American surgeons, the affected portion of the tube was excised, and the ends stitched together with the interrupted suture, followed by rapid recovery. In one instance in the hands of the late Dr. Charles A. Luzenberg,¹ of New Orleans, six inches of gut were thus successfully excised, the ligatures coming away at the end of thirty-five days. In a still more remarkable case, Dr. A. Brigham,² of Utica, removed seventeen inches of the small intestine, and yet the patient made an excellent recovery.

The radical cure of hernia has engaged much attention in this country, and some very ingenious modifications of different methods of treatment have been suggested. Among our countrymen who have been particularly conspicuous in interesting themselves in operative procedures of this kind, the names of Jameson, Watson, Pancoast, Riggs, Armsby, and Agnew deserve special mention.

The subcutaneous division of the stricture in strangulation in cases of old hernia, a hazardous operation in the hands of ordinary surgeons, has been practised successfully by the Professors Pancoast, father and son, of Philadelphia. I am not aware that the operation has ever been performed by any other practitioners in this country.

The improvement of trusses for the retention of the bowel in hernia and for the radical cure of this affection has long been an object of deep study on the part of our surgeons, as is proved by the numerous inventions before the profession, not a few of which display uncommon ingenuity in the adaptation of correct principles and in the accuracy of their construction. Among the very best of these contrivances, if indeed not the best, are the trusses devised by the late Dr. Heber Chase, of Philadelphia, instruments which combine, in an eminent degree, all the requisite qualities of such supports. The ingenious inventor, a member of the profession, devoted many of the best years of his life to their improvement, and the result is that, although he long since passed away, they still command the confidence of our most enlightened and experienced practitioners.

To Physick³ we are indebted for the first accurate account of an affection of the lower bowel, known as the cystic, sacculated, or *sacciform* rectum. It was originally described by him in the early part of the present century, and, as far as my knowledge extends, no mention of it is made in any English work, although it is of sufficiently frequent occurrence, especially in advanced life. Physick not only pointed out its pathology and mode of formation, but its proper treatment. Until the early part of the present century surgeons had no correct or fixed ideas respecting the situation of the internal aperture in anal fistule, and the

¹ Gros's Am. Med. Biography, p. 556.

² Am. Journ. Med. Sci., April, 1845, p. 355.

³ Am. Cyclop. of Prac. Med. and Surgery, vol. II. p. 123.

consequence was that many severe and even dangerous operations were performed that might otherwise have been avoided. Professor Ribes, of Paris, led the way in the investigations which finally cleared up this matter; a path soon afterwards successfully explored by the late Professor Horner,¹ of Philadelphia, who by a series of careful dissections, fully verified the observations of the French anatomist, and thus definitively settled a question which had so long agitated the surgical profession in different parts of the world.

For the cure of anal fistule, I have for the last thirty years performed a very simple operation, consisting in the introduction of a flexible grooved director through the track into the bowel, drawing out the extremity of the instrument with the index finger previously inserted into the tube, and then, while the point of the instrument rests upon the opposite nates, dividing the overlying structures with a narrow bladed bistoury. I mention this operation because in Europe, and indeed, I believe, also, in this country, the old method of cutting from within outwards with the end of the finger hooked over the extremity of a probe-pointed bistoury in the rectum is the one still almost universally pursued.

Gastrotomy has been performed several times by American surgeons for the removal of foreign bodies from the stomach. Among other cases is the remarkable one of Dr. John Bell,² of Wapello, Iowa, in which a bar of lead, ten inches in length by upwards of six lines in diameter, weighing one pound, was successfully removed. Gastrotomy for the relief of suffering caused by organic stricture of the œsophagus has, I believe, been performed but once in this country, namely, in 1869, the operator being Dr. Frank F. Maury,³ of Philadelphia. Death ensued at the end of seventeen hours. Dr. Samuel White,⁴ of Hudson, New York, early in the present century, performed enterotomy successfully for the removal of a large teaspoon, swallowed in a paroxysm of delirium.

Extirpation of the kidney, on account of destructive disease of that organ, originally performed in 1861 by Dr. Charles L. Stoddard,⁵ of Wisconsin, and by Peaslee in 1868, has since been successfully practised by Dr. J. T. Gilmore,⁶ of Mobile, Alabama. The patient, who was pregnant at the time of the operation, was delivered at the full term, gestation having proceeded without any untoward occurrence. A *resumé* of all the recorded cases may be found in the *American Journal of the Medical Sciences* for January, 1873, page 277, and July, 1874, page 266.

The diagnosis and treatment of *perityphilitic abscess* have recently been ably illustrated by the researches of Dr. Willard Parker,⁷ Dr. Gordon Buck, Dr. Fordyce Barker, and Dr. Leonard Weber,⁸ of New York. The operation of incising the muscular walls of the abdomen, or, in other words, evacuating the matter by a direct incision, was first performed, it would seem, in 1848, by Mr. Hancock, of London, and revived by Parker in 1867. By this procedure an immense amount of local and constitutional suffering is avoided, and the part and system are placed in a much better condition for ultimate recovery.

¹ Am. Cyclop. of Prac. Med. and Surgery, vol. ii. p. 82.

² Am. Journ. Med. Sci., July, 1855, p. 272.

³ Ibid., April, 1870, p. 365.

⁴ New York Med. Rep., vol. iv., 2d Hex., 1807, p. 367.

⁵ Med. and Surg. Rep. 1861, vol. vii. p. 126.

⁶ Am. Journ. Obstetrics, May, 1871.

⁷ Med. Record, vol. ii. p. 25, and vol. xi. p. 12.

⁸ New York Med. Journ., Aug. 1871, p. 142.

Professor Joseph Pancoast¹ is entitled to the credit of having performed the first successful plastic operation for the relief of exstrophy of the *bladder*. His patient was a young man from one of the Western States, who consulted him on account of this malformation in 1858. The operation consisted in forming a covering for the exposed surface by means of cutaneous flaps borrowed from the immediate neighbourhood, which were then inserted, and approximated at the middle line by suitable sutures. Excellent union occurred, and the man experienced great relief from his discomfort, but died at the end of two months and a half from an attack of pneumonia. A similar operation was performed soon afterwards by Dr. Ayres,² of Brooklyn, with equally gratifying results, his patient being a young woman. Since that time the operation has been repeated, in a more or less modified form, by surgeons in different parts of the world. Dr. F. F. Maury,³ of this city, has performed it three times, twice with admirable results; it has also been successfully performed by Dr. John Ashhurst,⁴ by Dr. C. B. King, of Pittsburgh, and by Dr. Cheever and Professor Henry J. Bigelow,⁵ of Boston, the latter of whom, in two instances, modified the procedure by removing the exposed mucous membrane of the bladder so as to bring the cutaneous flaps in direct contact with the raw surface, thus facilitating their adhesion. Both cases had a fortunate termination.

Under this head may be briefly described an interesting and ingenious operation, devised by Physick, and since repeatedly practised by Professor Pancoast and myself, for the cure of incurvation of the penis, a congenital malformation always occurring in association with hypospadias or epispadias. The operation consists in cutting away a V-shaped section of the cavernous bodies of the organ a short distance behind the corona, and approximating the raw surfaces with several points of suture. The amount of structure excised should be barely sufficient to straighten the penis. No skin is removed; and only a few vessels require ligation. The operation being completed, the organ is placed upon a gutta-serena splint, and covered with cold-water dressings, erections being prevented by the usual means. Nothing could be more ingenious than such a device, one founded upon the same principle precisely as the operation invented by Dr. John Rhea Barton for the cure of ankylosis. No mention, so far as my information extends, is to be found of this operation in any foreign works on surgery.

As *lithotomists*, American surgeons are not surpassed by any in the world. The success of the late Dr. Benjamin W. Dudley, of Lexington, is, if correctly reported, without a parallel. It must be observed, however, that, as he did not keep a record of his cases, altogether, I believe, 207, with a loss of only 6, that there must always remain a doubt upon this subject. The late Dr. James Bush,⁶ who was, for many years, the assistant, and, if I mistake not, for a time a partner of Dr. Dudley, in giving an account of his operations, stated that these results were, as nearly as could be ascertained, correct. But even supposing that the mortality was considerably higher than the above figures tend to indicate, a fact of which I have not the slightest doubt, still the results would be

¹ N. A. Med.-Chir. Rev., July, 1859.

² Am. Med. Gaz., Feb. 1859.

³ Am. Journ. Med. Sci., July, 1871, p. 154.

⁴ Ibid., p. 70.

⁵ Boston Med. and Surg. Journ., Jan. 1876.

⁶ Am. Journ. Med. Sci., Feb. 1835, p. 535, and April, 1846, 545. Trans. Am. Med. Assoc., vol. iv. p. 273.

sufficiently above the ordinary standard to show that Dudley was a great lithotomist. In looking over the second edition of my treatise on the *Urinary Organs*, issued in 1854, I find that there is a table of 895 cases by 21 different operators, including those of Dudley, with a mortality of 44, or 1 in $20\frac{1}{2}$; a degree of success which, to say the least, may justly be styled brilliant. It will not be without interest to add that in 426 of these cases the instrument used was the gorget, and the knife in 424, with a mortality for the former of 1 in $23\frac{7}{11}$, and for the latter of 1 in $19\frac{4}{11}$. Dudley invariably employed the gorget, an instrument now entirely disused on this side of the Atlantic. Valentine Mott always employed the knife, and, with the exception of Physick and Gibson, all the Philadelphia surgeons did the same. Dr. Alexander H. Stevens, Dr. N. R. Smith, Dr. Gurdon Buck, and several others have devised peculiar instruments for this operation, but whether they possess any superiority over the ordinary bistoury, now so much in use among surgeons, experience has not determined. The method of operation usually selected is the lateral, as practised and perfected by William Cheselden, in the early part of the last century. A few of our surgeons prefer the bilateral method. The suprapubic operation was first performed in this country by Dr. William Gibson, of this city. The median operation, usually but improperly described as Allarton's method, has yielded good success in the hands of some of our surgeons, as Albert G. Walter, of Pittsburgh, and J. L. Little, and Thomas M. Markoe, of New York. The largest calculus ever successfully extracted from the bladder, although not without breaking it, weighed twenty ounces, the operator being Dr. A. Dunlap, of Springfield, Ohio, and the patient, who survived this ordeal nearly three years, a man sixty-six years old. The largest number ever removed was upwards of one thousand, varying from the size of a partridge shot to that of a bean, in the celebrated case of Chief Justice Marshall, who was cut by Physick when both were at an advanced age, the illustrious patient making an excellent recovery.¹

It is generally supposed that lithotomy was first performed in this country about 1760, the operator being Dr. John Jones, subsequently professor of surgery at New York, and after his removal to Philadelphia for a time physician to Washington and Franklin. The latter, as is well known, laboured for many years under stone in the bladder, but was evidently afraid to submit to the use of the knife, notwithstanding the severity of his sufferings.

The most extensive collection of urinary calculi in the United States is in the museum of the College of Physicians of Philadelphia, and forms a part of the bequest of the late Professor Mütter. Many of the specimens, however, were obtained in Europe. To Professor Peter,² of Lexington, Kentucky, the profession is indebted for the most comprehensive series of analyses of urinary calculi yet made in this country. The specimens examined by him formed a portion of the collection contained in the museum of Transylvania University, as the result of the operations of Professor Dudley. The paper published upon the subject by Dr. Peter is well worthy of an attentive perusal. The largest stone ever successfully removed in this country was, as already stated, one which occurred in the practice of Dr. Dunlap, of Ohio. Professor Eve removed successfully one hundred and seventeen calculi from one patient, and Physick,

¹ Am. Journ. Med. Sci., Feb. 1832, p. 537.

² Western Lancet, Nov. 1846, p. 241.

as above mentioned, upwards of one thousand, all of course very small. The lateral operation has been most frequently performed by B. W. Dudley, Valentine Mott, N. R. Smith, J. P. Mettauer, Paul F. Eve, W. T. Briggs, and S. D. Gross; the bilateral by R. D. Mussey, P. C. Spencer, Willard Parker, Joseph Pancoast, and Paul F. Eve. Walter, Little, and Markoe have thus far been the principal advocates of the median method. The suprapubic and rectovesical operations have been performed only in a few instances, and are justifiable only under peculiar circumstances.

Lithotrity, more properly called lithotripsy, has never met with much favour on this continent, a circumstance so much the more surprising when it is remembered how common calculous diseases are in certain sections of the United States. The first operation of the kind was performed by Dr. Depeyre,¹ of New York, in 1830. This was followed soon afterwards by the cases of Alban Goldsmith, Jacob Randolph, William Gibson, Joseph Pancoast, N. R. Smith, J. Mason Warren, P. S. Spencer, Gurdon Buck, H. J. Bigelow, and others. To Randolph is usually, and I believe very justly, conceded the credit of having been the earliest and most successful cultivator of lithotrity in the United States. He operated a considerable number of times upon patients of all ages, and is said to have possessed an unwonted degree of dexterity in the use of the necessary instruments. Pancoast, N. R. Smith, Buck, and Bigelow, not to name others, also deserve honourable mention in connection with the subject.

For the relief of chronic cystitis, dependent upon hypertrophy of the prostate gland, one of the most painful and distressing of affections, attended with an almost constant desire to micturate, the late celebrated Mr. Guthrie, of London, suggested perineal lithotomy, an operation which, however, he never performed. This credit was reserved for Professor Willard Parker,² of New York, by whom the idea was first practically carried out in 1846. Five years later he repeated it in a similar case, the patient being an old man, who had long suffered from the effects of this disease, and who, consequently, was not a favourable subject for the operation. He was, nevertheless, greatly benefited by it, but died at the end of a month, apparently from uræmic poisoning. Since that period the operation has occasionally been repeated by other American surgeons, among others by Dr. Battey, of Georgia, and Professor Powell, of Chicago.

Of the great value of this operation, as a palliative measure, no longer any doubt can be entertained by any experienced or enlightened surgeon. That it will effect a permanent cure when the bladder has undergone serious structural lesion is, of course, impossible. In the milder cases, however, such a result may certainly be reasonably looked for in both sexes. The operation is less difficult than that for stone in the bladder, and almost the only danger would probably be from hemorrhage, as the vessels about the prostate gland and neck of the bladder are always much enlarged and engorged in chronic catarrh.

A similar operation has occasionally been performed upon the female, as in the cases reported by Dr. N. Bozeman,³ and by Professor T. G. Rich-

¹ N. Y. Med. Journ., Feb. 1831, p. 383.

² New York Journ. of Med., July, 1851, p. 83; and Trans. N. Y. State Med. Soc., 1871, p. 345.

³ N. Y. State Med. Soc. Trans., 1871, p. 326.

ardson. Vaginal cystotomy for the cure of this affection was originally suggested by Dr. J. Marion Sims, in 1858, but was, if I mistake not, first performed by Dr. T. A. Emmet.¹ The wound in the bladder, in this operation, is kept open until complete relief is afforded, when, if necessary, it is artificially closed. Dr. T. W. Howe² recently successfully treated an obstinate case of chronic cystitis by dilatation of the neck of the bladder. The value of vaginal cystotomy, like that of perineal cystotomy in the male, is now fully established, and much of the interest which the procedure has elicited is due to American genius and enterprise.

The treatment of *strictures* of the urethra is a subject which has received much attention on this side of the Atlantic. Many ingenious instruments have been devised as guides to the bladder, and for overcoming the obstruction; instruments, perhaps, not always so valuable as the claims set up for them by their respective authors would seem to indicate. The names of Van Buren, Gouley, and Otis deserve special mention in connection with this subject. In regard to the perineal section, or external urethrotomy, for the cure of tight, callous strictures attended with fistulous openings in the perineum and scrotum, the operation, originally described by Desault, was well known in the United States, and frequently performed, before a knowledge of it was introduced to the notice of European surgeons by the late Professor Syme, of Edinburgh, the principal operators having been Physick, Stevens, Jameson, Rogers, and Warren.

The fact that *masturbation*, when carried to great excess, may, in certain constitutions and states of the system, give rise to insanity has long been known to medical men, and various remedies have accordingly been suggested for its cure. Of the purely medical treatment this is not the place to speak, and of the surgical there are only two methods which need here be mentioned. I allude to castration and the excision of a portion of the deferent tubes. Of these two proceedings, both practised by American surgeons, the former has met not only with severe criticism, but pointed condemnation. That such an operation is, at first sight, well calculated to elicit such rebuke is not surprising; I was myself at one time an uncompromising opponent of it, and it has only been after much reflection and deliberation that I have reached a different conclusion. No man who is in his right senses would think of employing such a remedy in ordinary cases; but when the habit of onanism is so firmly established as completely to wreck the patient's mind, and all other remedies have been employed in vain, surely any means calculated to rescue the unfortunate sufferer from destruction is not only justifiable but in the highest degree proper. The remedy, it will be perceived, is a very different one from excision of the clitoris, so absurdly practised by Baker Brown and others, for the cure of masturbation in the female. By removing the testicles the surgeon strikes at once at the very root of the evil, and thus places the patient in a much better condition for the favourable action of other remedies and his ultimate recovery. Professor Van Buren,³ of New York, in 1848, in a case of partial idiocy consequent upon excessive onanism, had recourse to the excision of a section of each vas deferens, as a substitute for castration, all other means having failed to break up the disgusting habit. The operation, however, proved of no advantage. I am not aware that this operation, which, of course, is

¹ *Am. Practitioner*, Feb. 1872, p. 65.

² *Medical Record*, vol. x. p. 559.

³ *Genito-Urinary Diseases*, Van Buren & Keyes, New York, 1874, p. 458.

eventually followed by complete atrophy of the testes, has been repeated either in this country or in Europe.

The *extirpation of tumours*, even of the most simple kind, is frequently attended with much difficulty, especially in the hands of young and inexperienced surgeons; a difficulty which is often greatly enhanced when the morbid growth is embedded in important structures, as in the cervical, axillary, inguinal, femoral, and popliteal regions. At the present day rules for meeting these contingencies abound in our surgical treatises; but it was far different a third of a century ago, when the only great work on surgery in the English language was Samuel Cooper's Dictionary; a work of world-wide fame, reprinted in this country, and translated into most of the languages of Europe. It was about this time that Dr. Alexander H. Stevens,¹ of New York, published his celebrated clinical lecture on the operative surgery of tumours, delivered at the New York Hospital, in which he enunciated these two golden rules as guides in all operations of this kind: First, to cut down fairly upon the morbid growth before commencing its dissection; and, secondly, to remove the diseased mass and nothing more. Of the value of these suggestions every modern surgeon is fully aware, and it is hardly necessary to add that, as they were the result of a large clinical experience, they were received with great respect and consideration by the medical profession both at home and abroad.

The huge growths, which are occasionally developed during the progress of elephantiasis of the skin and connective tissue in the lower extremities, in the genital organs, and in other parts of the body, although uncommon in this country, are now and then met with, either among our own people, or in persons sent hither for advice and treatment from South America and the West Indies; and several cases have occurred in which large masses of this kind seated in the scrotum have been removed by some of our surgeons, as Picton, of New Orleans, N. Bozeman and J. S. Thebaud, of New York, and John Neill, of Philadelphia. The weight in two of these cases, both successful, was, respectively, fifty-three and fifty-one and a half pounds. Dr. Bozeman's patient died of peritonitis nearly a fortnight after the operation. The tumour weighed forty pounds.

With a view of arresting the growth in elephantiasis, Dr. Carnochan,² of New York, in 1851, was induced to tie the main artery leading to it, hoping, by cutting off its supply of blood, to cause the growth to shrink, or to undergo more or less atrophy. His case was one of elephantiasis of the lower extremity, for the relief of which he ligated the femoral artery. In another instance—one of elephantiasis of the head, face, ears, and neck—the same surgeon tied both the primitive carotid arteries after an interval of six months.³ Since Dr. Carnochan's first case, ligation of the femoral artery for the relief of elephantiasis of the lower extremity has been practised by Dr. Campbell, formerly of the Philadelphia Hospital, Dr. Thomas G. Morton, of this city, Dr. Bauer, of St. Louis, Dr. McGraw, of Detroit, and several others. In no instance, however, I believe has a complete or permanent cure followed these laudable efforts; a significant fact not to be overlooked in estimating the true value of this procedure, the more especially as most of the operators are men of acknowledged ability. In a case of elephantiasis at the Pennsylvania Hospital, under

¹ Boston Med. and Surg. Journ., vol. xxii. p. 53.

² N. Y. Journ. Med., Sept. 1852, p. 161.

³ Am. Journ. Med. Sci., July, 1867, p. 109.

the care of Dr. Addinell Hewson, marked relief was afforded by that gentleman's so-called earth dressing, aided by the use of the roller.

In *excisions* of the joints and jaws, and in operations upon the bones for the removal of sequesters, as well as in the extirpation of tumours, surgeons in all parts of the world have long been in the habit of employing what is called the *curvilinear incision*, the first application of which was at one time a subject of considerable controversy, especially between Velpeau and Mott. In his great work on "Operative Surgery," the former of these distinguished men dwells with special emphasis upon this form of incision, and in a letter addressed to Dr. Mott, in the American translation of the work, by Dr. Townsend, he observes: "A point which I deem important is that which relates to my *new* processes for the extirpation of tumours, the amputation of the jaws, and in exsections. Persuaded that you must perceive at a glance all the advantages to be derived from the curved incision, substituted for the straight, in the extirpation of tumours which may be removed without trenching upon the integuments, I will make no further remarks upon the subject in addition to those you will find in my notice."

In his comments upon these remarks, Professor Mott states that he had invariably, in all his operations for the removal of the lower jaw, since 1821, employed the curvilinear incision, a procedure to which, he continues, his French confrere justly attaches such great importance. "His description," he further adds, "of its advantages and superiority over every other mode of reaching the osseous structures to be excised by the saw or nippers, is so clear and graphic that I have nothing to add to it whereby I could impress upon the mind of the surgeon its decided preference over every other mode." It thus clearly appears that our countryman is fairly entitled to the credit of priority in this important matter. I may state that I employed the curvilinear incision in many of my operations long before I became acquainted with the fact that it had been used by Dr. Mott, and that Dr. Joseph Pancoast and other Philadelphia surgeons have, on all suitable occasions, availed themselves of the curvilinear incision for upwards of a third of a century. Of its great advantages every operator is fully aware.

Excision of nerves for the cure of neuralgia and other affections has been frequently practised by American surgeons, and has, especially of late, been carried to a very great extent, in one case embracing the removal of a section of the entire brachial plexus. The superior maxillary nerve has been cut out beyond the ganglion of Meckel, Dr. Carnochan,¹ of New York, having led the way in this bold procedure, in which he has been followed by Pancoast, Blackman, W. H. Mussey, and several others. A very ingenious operation for exposing and excising the second and third branches of the fifth pair of nerves was devised, many years ago, by Professor Pancoast, and is fully described in the second volume of my *System of Surgery*, issued in 1872. In the four cases in which it was performed, the cure, in all, was permanent, after years of agonizing suffering. An instance was recently reported by Dr. J. L. Stewart, of Erie, Pennsylvania, in which he excised three inches of the median nerve for the relief of neuralgia caused by a gunshot wound of the forearm inflicted six years previously. In 1873, Dr. F. F. Maury² excised the brachial plexus of nerves from an elderly man, an inmate of the

¹ Am. Journ. Med. Sci., Jan. 1858. p. 134.

² Ibid., July, 1874, p. 29.

Philadelphia Hospital, on account of the exquisite suffering occasioned by numerous neuromatous tumours occupying the integument of the shoulder, back, and chest. After the failure of all other known and approved methods of treatment, the brachial plexus was exposed, and a section, embracing four-fifths of an inch of nerve substance, removed. The patient, who gradually recovered from the effects of the operation, experienced great relief immediately after it was over, the improvement lasting for a few months, but the neuralgia has of late been again severe. An operation of a similar kind, but not for the same disease, has been performed by Drs. Sands and Seguin, and is reported in the *New York Archives of Scientific and Practical Medicine* for 1873. I have myself done a considerable share of this kind of work; and some interesting examples of a rather formidable character were reported by the late Dr. Josiah C. Nott,¹ of Mobile. In a remarkable case of vaginal neuralgia of twelve years' duration, in the care of Dr. Thomas G. Morton,² of Philadelphia, a speedy and permanent cure was effected by the excision of the perineal nerve. The nerve was exquisitely tender on pressure, and rolled under the finger like a firm cord.

Although it is not in accordance with the design of this paper to speak of works on surgery, I cannot forbear referring here to two monographs, the productions of three American authors, inasmuch as they have a direct bearing upon the subject under discussion. I allude to the work of Dr. S. Weir Mitchell, Dr. George W. Morehouse, and Dr. William W. Keen, on *Gunshot Wounds and other Injuries of Nerves*; and to the admirable monograph on *Injuries of Nerves and their Consequences*, by Dr. S. Weir Mitchell, issued, respectively, in 1864 and 1872. The publication of these productions may be considered as forming a new era in the history of these lesions. Up to that period the whole subject was involved in mystery, and it was only by studying it in the light of clinical experience that it was successfully unravelled. The work of Dr. Mitchell is founded upon the careful observation and analysis of several hundred cases of injuries of nerves, and upon numerous experiments performed on animals, with a view of determining the physiological questions of the influence of pressure on nerves, elongation, and separation. Of this treatise it is not too much to say that it constitutes one of the most valuable contributions made to the medical and surgical science of the present day. Ever since the date of its publication the lesions of nerves have been regarded from a new stand-point.

As intimately connected with the condition of the nervous system, brief reference may here be made to another field of investigation, in which the labours of Dr. Mitchell have been conspicuously displayed. I allude to what is called *snakebite*, a subject concerning which science had been silent since the days of the Abbé Fontana in the latter part of the last century. In 1860, Dr. Mitchell gave to the profession the results of three years of work, almost unremittingly devoted to the object, pointing out in the clearest manner the nature, accidents, and incidents of venomous wounds, followed, the ensuing year, by a full account of their true treatment, up that period little, if at all, understood. Although other American physicians and scientists had performed experiments with the poison of the rattlesnake, it remained for the Philadelphia philosopher to throw an amount of light upon the subject, which has hardly a parallel in

¹ Bone and Nerve Surgery, Nott, Phila., 1866.

² Am. Journ. Med. Sci., Oct. 1873, p. 399.

any other branch of scientific investigation. I will only add that the researches of Dr. Mitchell have been embodied in a quarto volume, issued by the Smithsonian Institution, at Washington City, in 1861.

Plastic surgery has received much attention in this country, especially during the last thirty years. With the cultivation of this branch of the healing art are associated the names of a number of our most distinguished operators. Mention may be made, more particularly, of those of Joseph Pancoast, T. D. Mütter, John Watson, J. Mason Warren, F. H. Hamilton, Gurdon Buck, and David Prince, who have all rendered good service in this way. Pancoast¹ is entitled to great credit for his rhinoplastic operations, for the successful performance of which he has devised a special suture, admirably adapted to secure effective union of the flaps, and generally known by his name or as the plastic suture. As this suture is described in all our native treatises on surgery, it need not detain us here. European surgeons seem to be ignorant of its merits, if, indeed, not of its existence. The Indian method is the one usually adopted in this country for the restoration of lost or mutilated noses, and for closing gaps in the cheeks and lips. J. Mason Warren² occasionally adopted the process of Tagliacozzi, but, instead of raising the skin of the arm, as in the original method, he borrowed the requisite amount of substance from the forearm, a short distance above the wrist, thus rendering the confinement of the limb much less irksome. Dr. Gurdon Buck has recently obtained some remarkable results by the sliding process in operations for the cure of deformities of the nose, lips, and cheeks.

Dr. John Watson,³ of New York, in 1844, by a plastic operation closed a large opening in a man's forehead, caused by a syphilitic ulcer, this being probably the first case of the kind thus treated in this country. The first instance in which the cure of an ulcer was effected by grafting healthy integument upon its raw surface occurred in the practice of Professor F. H. Hamilton, then of Buffalo, the patient being a man who had lost a large portion of the skin of the leg by the fall of a heavy stone; the integument was borrowed from the sound limb, but was wholly inadequate to cover the ulcer. The graft gradually expanded centrifugally, and at the end of ninety days the cicatrization was complete. "Since the date of this observation," remarks Professor Hamilton, "I have repeated it many times with almost uniform success." A full account of this case will be found in the *New York Journal of Medicine* for 1854. Whether Mons. Reverdin borrowed his ideas of skin-grafting from the proposal of the New York surgeon, enunciated in 1847, in the *Buffalo Medical and Surgical Journal*, before he had an opportunity of putting it into practice, is a question which need not detain us here. The principle of the two processes is precisely alike.

Mütter and Pancoast, as, indeed, other American surgeons, have reported a number of instances in which plastic operations on a most extensive scale were performed for the relief of the unsightly and injurious contraction caused by the cicatrices left by burns and scalds. Much credit is justly due to these two gentlemen for the boldness of their undertakings and for the very able manner in which they were executed. Prior to the publication of the results of their cases, little attention had been bestowed upon this particular branch of the subject by our European brethren.

¹ *Operative Surgery*, Phila., 1844, p. 345, and *Med. Ex.*, N. S., vol. vii. p. 238.

² *Surgical Obs.*, with Cases, Boston, 1847.

³ *Am. Journ. Med. Sci.*, Oct. 1844, p. 537.

The late Mr. Pringle Teale, of Leeds, it is believed, took the lead in this class of cases in England.

Ophthalmology, as a specialty, or separate branch of surgery, took its rise in this country upwards of half a century ago in connection with the establishment of Eye and Ear Infirmaries in nearly all the larger cities of the Union, conducted by men who considered them chief as peculiarly fitted for this kind of work.

The New York Eye and Ear Infirmary was opened in 1822, the Pennsylvania Eye and Ear Infirmary at Philadelphia in 1822, the Massachusetts Eye and Ear Infirmary at Boston in 1829, and Wilks Ophthalmic Hospital of Philadelphia in 1834. The American Ophthalmological Society was instituted in 1864, and in its transactions may be found numerous proof of original and valuable contributions by its members. Dr. D. Williams, of Cincinnati, was, if I mistake not, the first physician on this continent who made ophthalmology an exclusive specialty, and who delivered the first regular course of lectures on ophthalmic medicine and surgery in a medical school.

The operations performed upon the eye during the first half of the present century were limited almost exclusively to the cure of cataract, the formation of artificial pupil, and the evacuation of fluids and of foreign matter from the chambers of the eye. Extraction of cataract was an infrequent procedure, confined to the hands of a few skillful men; comminution and depression were the common operations. Occasionally an eye was extirpated on account of malignant disease, but of enucleation of the ball as now practised we were in total ignorance. The operation for the cure of strabismus was unknown. In all these and other respects American surgeons did neither less nor more than their European brethren. The invention of the ophthalmoscope by Helmholtz, in 1852, revolutionized the science and the art of ophthalmology; and, if we have had no share in the vast improvements incident to that invention, one of the grandest of the age, we have kept steady pace with the advances made abroad, and, perhaps, added a few things to the general stock of knowledge, not wholly devoid of value.

Among the more important of these contributions may be mentioned the needle-knife of Dr. Isaac Hays,¹ long successfully employed by him, as well as others, for the comminution of cataract; the use of a suture in the cornea after the flap extraction of cataract by Dr. Henry W. Williams,² of Boston; the production of cataract in frogs by the administration of saccharine substances, by Dr. S. Weir Mitchell,³ of Philadelphia; the laceration of opaque capsule, by Dr. Agnew, of New York, with an instrument combining the principle of a needle and hook, his method of removing foreign bodies from the cornea, and, lastly, his improvements in canthoplasty and the operation for divergent strabismus; the gymnastic treatment of asthenopia proposed by Dr. Dyer, of Pittsburgh; the test cards of Dr. Green,⁴ of St. Louis, and of Dr. Pray,⁵ of New York, for the diagnosis of astigmatism; the wire loop of Dr. Levis for facilitating the extraction of cataract; the improved ophthalmoscope of Dr. Knapp⁶ and

¹ Am. Journ. Med. Sci., July, 1855, p. 81.

² Trans. Am. Ophthal. Soc., 1866 and 1867, p. 58.

³ Am. Journ. Med. Sci., Jan. 1860, p. 106.

⁴ Ibid., Jan. 1867, p. 117.

⁵ Archiv Ophthal. and Otol., vol. i. p. 17.

⁶ Trans. Am. Ophthal. Soc., 1873, p. 109.

of Dr. Loring,¹ of New York; the operation of Dr. Knapp for the removal of tumours from the optic nerve without sacrificing the eye, his hook for extracting foreign matter from the ball,² and, lastly, his improvement of the ring forceps;³ the theory of Dr. Loring¹ of the cause of the light streak in the vessels of the retina, and of the halo around the fovea; the optometer of Dr. Thomson,⁵ of Philadelphia, for the diagnosis of ametropia, together with his improvements in the use of cylindrical glasses in conical cornea, and his discovery of the connection between astigmatism and posterior staphyloma; finally, we must not forget to allude, in terms of high commendation, as the very latest American addition to ophthalmology, to the improved ophthalmoscope of Dr. Shakespeare, of Philadelphia, published in the *American Journal of the Medical Sciences* for Jan. 1876, a contrivance, apparently, admirably adapted to physiological experiments as well as to the diagnosis of diseases of the eye.

In the American appendix to Cooper's Dictionary of Surgery, issued in 1842, appears the curious statement by the editor, Dr. David Meredith Reese, that the straight muscles of the eye were divided by Professor William Gibson, of Philadelphia, for the cure of strabismus several years before the operation was performed by Dieffenbach, of Berlin. The result, however, it would seem, was not satisfactory, and the operation was finally, at the earnest solicitation of Dr. Physick, abandoned. After a patient research, I am unable to find any allusion to this operation in the writings of the Philadelphia surgeon; and the assertion of Dr. Reese appears to be based wholly upon a statement of the late Dr. Alexander H. Hosack, of New York, who, it is alleged, heard Dr. Gibson refer to the subject in his lectures in the University of Pennsylvania. In this country the operation of Dieffenbach was first performed by Dr. Willard Parker, and soon afterwards by Dr. Isaac Hays, of Philadelphia, Dr. Detmold, of New York, Dr. Golding, of Arkansas, and by myself, then a resident of Kentucky.

Although *Aural surgery* had no existence in this country as a scientific study until a quarter of a century ago, it may confidently be affirmed that it is nowhere cultivated with more ardor, or practised with more success, than it is at present on this side of the Atlantic. If we have not made any advances or discoveries, our knowledge of the pathology, diagnosis, and treatment of the diseases and injuries of the ear is of the highest order, fully on a level, in every respect, with our knowledge of the other branches of the healing art.

Among the earliest and most valuable contributions to otology may be mentioned the researches of Dr. Edward H. Clarke, late Professor of *Materia Medica* at Harvard University, "On the Causes, Effects, and Treatment of Perforation of the Membrana Tympani," published in the *American Journal of the Medical Sciences* for January, 1858. This paper was followed in the same year by that of Dr. Laurence Turnbull, in the *Philadelphia Medical and Surgical Reporter*, "On the Treatment of Otorrhœa considered as a sequel of Scarlatina." The same writer, in 1862, published a valuable memoir on "Otitis Interna," illustrated by three cases treated by perforation of the mastoid cells, the first operations, it is believed, of the kind performed in this country.

¹ Am. Journ. Med. Sci., April, 1870, p. 340.

² Trans. Am. Ophthal. Soc., 1873, p. 105.

³ *Ibid.*

⁴ *Ibid.*, 1870, p. 122, and 1873, p. 87.

⁵ Am. Journ. Med. Sci., Jan. 1870, p. 76, and Oct. 1870, p. 414.

Among the more recent contributions to the subject is that of Dr. Edward H. Clarke, of Boston, on the Nature and Treatment of Polypus of the Ear; of Dr. Charles H. Barrett, of Philadelphia, on the Mechanism of the Ossicle of hearing and the Membrane of the Round Window; of Dr. Hermann Kussp, of New York, on the Inflammations of the Internal Ear; of Dr. J. Green, of St. Louis, on the Action of Condensed Air on the Eustachian Tube; of Dr. J. O. Green, of Boston, on Otorrhœa; of Dr. Seely, of Cincinnati, on Aurai Polypus and its Treatment; of Dr. Rumhold, of St. Louis, on the Functions of the Eustachian Tube in relation of the renewal and density of the air in the Tympanic Cavity; and of Dr. A. H. Buck, of New York, on the Mechanism of Hearing. For further information as to what has been done in recent years in this department of surgery, I must refer the reader to the Transactions of the American Otological Society.

I cannot omit here the invention of a brief account of the *ward carriage*, as it is termed, of Dr. Thomas G. Morton, of Philadelphia, devised a few years ago, and employed with such signal benefit at the Pennsylvania Hospital, for which it was originally constructed.¹ Why it is not in general use in all such institutions is a question that might well be asked. Its arrangements are so perfect, and its conveniences so great, that it is only surprising it was not thought of long ago. The appliances for cleansing wounds and ulcers are so complete that there can no longer be any excuse for an impure or infectious condition of the atmosphere in the wards of any hospital in which the carriage is employed.

The same ingenious surgeon, in 1872, invented an admirable *hospital carriage* and bed-elevator for the transfer of surgical and medical cases, from one ward to another, or to and from the amphitheatre for operation and clinical instruction. By this contrivance the inconveniences attendant upon the ordinary procedure of carrying the patient about upon his bed, a mode of conveyance often accompanied with great jarring and discomfort, are entirely obviated. The apparatus consists of a double truck, the upper one of which is elevated by a series of cams, running upon a narrow iron track, and capable of being raised and depressed at pleasure by means of a chain worked by a crank. It is six feet and five inches in length by two feet and nearly a half in width, is constructed of oak, and is moved by four wheels supported by steel pins. A description of the apparatus, accompanied by a wood-cut, may be found in the *American Journal of the Medical Sciences* for July, 1874.

To write the history of a century of American Surgery without a recognition of the services rendered by our *Army Surgeons*, would be an unjustifiable omission. My only regret is that my limited space does not permit me to enter more into particulars.

Of the amount of service contributed during the late war by the medical profession a tolerably correct estimate may be formed when it is stated that 11,608 surgeons and assistant surgeons were on active duty either in the field, in the camp, or in the hospital. Of this number, 9 were killed by accident, and 32 in battle, by guerillas, or by partisans; 83, of whom 10 died, were wounded in action; 4 died in prison, 7 of yellow fever, 3 of cholera, and 271 of various diseases, mostly incident to military life; presenting thus an aggregate of 409 names. The amount of labour performed by the medical staff during the war may be faintly guessed when it is stated that 157,423 cases of wounds and dis-

¹ Am. Journ. Med. Sci., Jan. 1867, p. 135.

eases occurring among the white troops were treated in general hospitals alone, exclusive of the vast numbers that were attended in regimental and post hospitals.

Surgeon-General Barnes, at the close of his annual report for 1865, in speaking of the character of the medical staff of the army, says: "I desire to bear testimony to the ability, courage, and zeal manifested throughout the war by the officers of the Medical Department under all circumstances, and upon all occasions. With hardly an exception they have been actuated by the highest motives of national and professional pride, and the numbers who have been killed and wounded bear most honourable testimony to their devotion to duty on the field of battle."

How far the services of these faithful and devoted men were instrumental in bringing the war to a favourable issue, and in rescuing the lives of wounded and diseased soldiers by the timely and judicious interposition of their scientific knowledge and skill, is, of course, merely a matter of conjecture. That they were of vast importance no intelligent man will doubt; and it is not too much to say that the country owes the Medical Staff a great and lasting debt of gratitude.

Most of the hospitals erected during the war were constructed on the pavilion principle, and were supplied with every possible accommodation, comfort, and convenience. It seemed, indeed, as if the Government had been determined, through its medical staff, to rob injury, disease, and surgical operations of their terror, such was the palatial character of many of these establishments. Of these hospitals upwards of two hundred were still in existence on the 1st of January, 1865. "The hospital transport system included four first-class sea-going steamers, equipped with stores and supplies for five thousand beds, besides a large number of river hospital boats, hospital railway trains, ambulance, etc."

The *Army Medical Museum* at Washington, initiated by Surgeon-General Hammond, and perfected by Surgeon-General Barnes and his medical staff, under the auspices of the Government, is confessedly the noblest institution of the kind in the world. In 1873 it contained upwards of fifteen thousand catalogued specimens, comprising objects in surgery, medicine, anatomy, microscopy, and comparative anatomy, plaster casts, drawings, crania of Indians, skeletons and crania of animals, birds, reptiles and fishes, and a complete collection of models of ambulances, litters, and other appliances for the transportation of the sick and wounded, artificial limbs, and photographs illustrative of surgical operations; in short, everything that can impart completeness to such an establishment.

In the same edifice is the *Library of the Surgeon-General's Office*, embracing 38,000 volumes, and 40,000 pamphlets, making the total number of titles nearly 70,000. About 2000 of the works are of a non-professional character, illustrative of the history of the late war, meteorology, physics, and other subjects. The library is especially rich in its collection of American medical periodicals. Much of the success which has attended the establishment of this library—certainly one of the largest and finest of the kind in the world—is justly due to the industry, zeal, and judgment of Assistant-Surgeon John S. Billings, who, amidst other arduous duties, has devoted much of his time to the enterprise, and has, in addition, found leisure to prepare an admirable catalogue of the authors of the books, with an alphabetical index of subjects, thus greatly

facilitating the labour of reference on the part of those who desire to consult the collection.

To Surgeon-General Barnes and to two of his assistants, Dr. George A. Otis and Dr. Joseph J. Woodward, U. S. Army, the country is indebted for their unceasing efforts to build up a great Army Medical Museum, and for the vast labour, talent, learning, judgment, and enterprise which they have displayed in publishing the surgical and medical memoirs of the late war; works which, when completed, will reflect imperishable lustre upon the medical staff of the army, and upon our national medical literature. Dr. Billings, too, deserves honourable mention, in connection with the Surgeon-General's Bureau, for the ability which marks his reports upon hygiene of the army, barracks, hospitals, and other subjects.

Statistics, illustrative of the results of surgical operations, diseases and accidents, are, as is well known, often very troublesome and laborious undertakings, especially when attempted upon a large scale. Of this kind of work, unknown a third of a century ago, a very considerable amount has been done in this country, and, for the most part, done well. Among the more important and laborious of these contributions may be mentioned those of George W. Norris,¹ Stephen Smith,² Willard Parker,³ and Thomas G. Morton⁴ on the ligation of arteries for the cure of aneurism, the suppression of hemorrhage, and the arrest of morbid growths; of S. W. Gross,⁵ on the treatment of aneurism by digital compression; of George Hayward,⁶ George W. Norris,⁷ and James R. Chadwick⁸ on amputations in general; of Stephen Smith,⁹ George C. Blackman,¹⁰ and Thomas G. Morton¹¹ on amputations of the hip-joint; of John H. Brinton on amputations of the knee-joint;¹² of George W. Norris, on ununited fractures¹³ and compound fractures;¹⁴ of Blatchford, Spoor, and J. L. Smith on hydrophobia; of Lewis A. Sayre,¹⁵ Chas. K. Winne,¹⁶ and John Ashhurst¹⁷ on excision of the hip-joint; of Stephen Rogers¹⁸ on excision of the scapula; of Richard M. Hodges,¹⁹ in an admirable monograph, on excisions in general; of Frank H. Hamilton²⁰ on deformities after fractures; of John S. Billings²¹ on trephining in epilepsy; of S. D. Gross on foreign bodies in the air-passages;²² of Gurdon Buck²³ on laryngeal tumours; of J. Mason Warren and Frank H. Hamilton on the results of

¹ Am. Journ. Med. Sci., N. S., vols. x., xiii., xiv.

² New York Med. Journ., Sept. 1852, p. 184, and Jan. 1853, p. 9.

³ Ibid., Nov. 1852, p. 307.

⁴ Penna. Hosp. Rep., vol. i. 1868.

⁵ North Amer. Med.-Chir. Rev. 1859.

⁶ Am. Journ. Med. Sci., N. S., vol. i.

⁷ Ibid., vol. xxii., and N. S., vol. i.

⁸ Boston Med. and Surg. Journ., 1872, vol. ix., appendix.

⁹ N. Y. Journ. Med., N. S., vol. ix.

¹⁰ Western Lancet, vol. xviii. p. 7.

¹¹ Am. Journ. Med. Sci., July, 1866.

¹² Ibid., April, 1868, p. 305.

¹³ Ibid., Jan. 1842, p. 13.

¹⁴ Contributions to Practical Surgery, Norris, Phila., 1873.

¹⁵ Trans. Am. Med. Assoc., vol. xiii. p. 469.

¹⁶ Am. Journ. Med. Sci., July, 1861, p. 26.

¹⁷ Penna. Hosp. Rep., vol. ii. p. 143.

¹⁸ Am. Journ. Med. Sci., Oct. 1868, p. 359.

¹⁹ Trans. Am. Med. Assoc. 1855-56-57.

²⁰ Am. Journ. Med. Sci., July, 1861, p. 299.

²¹ Trans. Am. Med. Assoc., vol. vi, 1853, p. 507.

¹⁹ Boston, 1861.

²² Phila., 1854.

surgical operations in malignant diseases; of S. W. Gross on the treatment of compression of the brain as met with in army practice;¹ of George A. Otis and S. W. Gross on amputations and excisions necessitated by gunshot wounds;² of John Ashhurst on injuries of the spine;³ of S. W. Gross on ligation of the veins;⁴ of Thomas G. Morton on amputations,⁵ and on lithotomy and lithotripsy at the Pennsylvania Hospital;⁶ of S. W. Gross on synostosis of the knee-joint;⁷ of William Hunt⁸ on fractures of the larynx; of Thomas H. Andrews⁹ on penetrating wounds of the skull; of R. O. Cowling on tetanus; of J. Solis Cohen¹⁰ on croup in its relations to tracheotomy; of G. A. Van Wageningen on fractures treated at Bellevue Hospital with plaster of Paris apparatus; and of Charles W. Dulles¹¹ on suprapubic lithotomy.

Finally, let it not be supposed from what precedes that the American surgeon is a mere operator; if he ranks high in this particular, he ranks high also as a therapist. Nowhere, it may safely be asserted, are the great principles of surgery better taught, or better understood, than they are in this country. As a general practitioner, skilled in diagnosis, and in the art of prescribing, it is no presumption to affirm that he has no superior. If, as a body, we are deficient in any particular, it is in the more refined and subtle portions of our studies; studies which, after all, are of no essential practical importance, and which, it is not too much to say, will in due time receive their just proportions.

As a proof of what has been here stated, it is only necessary to refer to a few well-known facts. Thus, the treatment of wounds and injuries has been greatly simplified during the last fifty years. The importance of rest and of the prevention of pain in these and other lesions is universally recognized. The adhesive process is aimed at after all operations, whether small or great. None but the most simple dressings are employed. Little, if any faith, is placed by any enlightened or experienced surgeon on this side of the Atlantic in the so-called carbolic acid treatment of Professor Lister, apart from the care which is taken in applying the dressing, or, what is the same thing, in clearing away clots and excluding air from the wound;—an object as readily attained by the "earth dressing" of Dr. Addinell Hewson,¹² of Philadelphia, and by the oil dressing—composed of a thin layer of cotton or patent lint, wet with olive-oil—which I have myself employed for many years, with signal benefit, in nearly all cases of wounds under my charge, whether the result of accident or design. Such a covering, at once light and simple, answers every purpose, even in the largest wounds, excluding the ingress of foreign matter, and keeping the tissues moist and comfortable. The treatment of fractures with the aid of adhesive plaster and other appliances has received, as we have seen, some of its most valuable improvements in this country. No more beautiful or delicate instruments are manufactured than in Philadelphia, New York, Boston, and other large cities of the Union. The American artificial limb is celebrated everywhere for its

¹ Am. Journ. Med. Sci., July, 1873.

² Ibid., Oct. 1867, p. 423.

³ Injuries of the Spine, Phil. 1867.

⁴ Am. Journ. Med. Sci. Jan. and April, 1867.

⁵ Ibid., Oct. 1870.

⁶ Penna. Hosp. Rep., vol. ii. 1869.

⁷ Am. Journ. Med. Sci., April, 1868.

⁸ Ibid., April, 1866.

⁹ Penna. Hosp. Rep., vol. i. p. 281.

¹⁰ Trans. Med. Soc. of Pennsylvania, 1874.

¹¹ Am. Journ. Med. Sci., July, 1873, p. 39.

¹² Earth as a Topical Application in Surgery, Phila., 1872.

elegance, lightness, and durability. Our adhesive plaster was formerly, if, indeed, it is not still, unequalled in excellence. Collodion, as a surgical dressing, owes its origin to an American physician, Dr. J. P. Maynard, of Boston. The wire suture was introduced into regular practice by Dr. J. Marion Sims; and Professor Joseph Pancoast, many years ago, invented an ingenious suture, of peculiar construction, admirably adapted to promote the success of rhinoplastic and other plastic operations. The use of compressed sponge, so valuable in the treatment of many surgical affections, is mainly of American origin, largely due to the labors of the late Dr. J. P. Bachelder, of New York. The pathology and treatment of inflammation are much better understood; a much more rational system of dietetics prevails; inordinate depletion, in the form of heroic bleeding and purging, has ceased to be the order of the day; the influence of Nature in the cure of disease is better appreciated; and sanitary science has pointed out new paths of inquiry and of investigation, all tending to prevent suffering and to prolong life. Two most valuable remedies, of native origin—*gelsemium* and *veratrum viride*—have been added to the surgeon's pharmacopœia, and hold the same exalted rank in this country as depressants in the treatment of inflammation, neuralgia, and rheumatism, that *aconite* enjoys in Great Britain and on the Continent of Europe.

Conservative surgery is nowhere more thoroughly appreciated than it is in this country. Taking its rise with Physick, who was a great advocate of rest in the treatment of local diseases, and who scrupulously refrained from the employment of the knife whenever it was possible, it has always formed a prominent trait in the conduct of every enlightened American practitioner. Comparatively few knivesmen, properly so called, exist among us, and it is worthy of note that their career is usually as shortlived as it is inglorious.

It will thus be seen that during the hundred years which have just elapsed the medical profession has kept steady pace with the general progress of the arts and sciences on this continent; and not the least gratifying circumstance connected with it is the knowledge that it occupies a position in the social circle not accorded to it in any other part of the world, Great Britain, perhaps, excepted. The cultured and refined American physician is a prince among men. Let us be grateful for what we are and for what we have done; grateful that the past has such a splendid record—that it has left such distinct footprints upon the sands of Time—and that the future is so full of bright promises. The surgeons who are now rapidly passing away—those links between the past and the present—who have so long borne the heat and burden of the day—are not afraid to entrust to their younger brethren the sacred duty of carrying on the work which they have so zealously laboured to advance and improve. They feel assured that the honour, the dignity, and the glory of American surgery will be safe in their keeping, and that the century closing with the year 1976 will open for medicine one of the brightest pages in the history of human progress.

REVIEWS.

ART. XXII.—*Hospital Plans. Five Essays relating to the Construction, Organization, and Management of Hospitals, contributed by their Authors for the use of the Johns Hopkins Hospital of Baltimore.* Large 8vo. pp. 352. New York, 1875.

It is known to many of our readers, no doubt, that the late Johns Hopkins, of Baltimore, made a bequest, now amounting to three millions of dollars, for the purpose of building and maintaining a general hospital in that city. In a letter to the gentlemen whom he selected as trustees for the management of this endowment, he directs them "to obtain the advice and assistance of those at home and abroad who have achieved the greatest success in the construction and management of hospitals." Accordingly, the trustees authorized their building committee "to confer with five distinguished physicians, chosen from different parts of the country, who have made hospitals their special study, and obtain from them such advice as they may need, and to compensate them for it." The men thus conferred with for this purpose were John S. Billings, Bvt. Lt.-Col. and Asst. Surg. U. S. A.; Norton Folsom, Superintendent of the Mass. General Hospital at Boston; Joseph Jones, Professor of Chemistry and Clinical Medicine in the University of Louisiana, Visiting Physician of Charity Hospital, New Orleans, late Surgeon in the Confederate Army; Caspar Morris, of Philadelphia, late Visiting Physician of the Episcopal Hospital; and Stephen Smith, of New York. The papers furnished by these gentlemen, each accompanied by plans, and some papers presented by the architect employed by the trustees, John R. Niernsee, make up the present volume.

These persons have all done service in hospitals in some medical capacity, and thus their conclusions are offered as the result of an ample practical experience. Strengthened as they are, too, by the acknowledged reputation of their authors for professional ability, these conclusions are entitled to most respectful consideration. Such an amount of information on the subject treated of, at once extensive, thorough, well prepared, and reliable, we have never before had within the same compass; and the trustees of the Johns Hopkins Hospital may well be satisfied with this the first step in the discharge of their trust. And, thanks to the large and liberal spirit that prompted the undertaking, the country at large will share the benefit of the light thus shed on a class of institutions in which the public are most deeply and worthily interested. And never could it have come more opportunely than at the present moment when establishments which have been universally regarded as pure, unqualified blessings to humanity, are supposed by many to lead to an amount of mischief scarcely balanced by the benefits they confer.

It would be impossible, within our limits, to notice every particular thing described in a book like this, made up, as it is, of five or six other books. We can only call attention to the essential points of construction.

and examine them in the light thrown upon them by these writers. Diversity of opinion, of course, we might expect as the natural result of a peculiar experience and independent habits of thinking, and not of hasty or superficial inquiry. Its practical effect should be to warn us against premature conclusions, and lead to fresh investigation.

To simplify our conception of a hospital as an instrumentality for the cure of human maladies, we may begin with what is called a ward—an apartment in which some portion of the patients are kept and cared for, and provided with certain adjunct apartments required for the performance of this duty. The form of the ward that has always been adopted is that of a parallelogram, three or four times longer than it is wide, intended to receive from twenty to thirty patients, the exact number being determined by its size and the amount of floor space supposed to be required by each patient. The latter requisite is put by the present writers at about 100 square feet. The proper amount of air space they estimate at from 1200 to 2000 feet, which implies a very high ceiling or roof. If the ventilation is left solely to the doors and windows, then certainly the more air space the better; but if artificial means are used to change the air, it is equally obvious that the less they have to change the better.

The adjuncts to the ward are a nurse's room, a dining-room, a scullery, a room for bedding and clothing, water-closets; and sometimes we find among them a kitchen in which food is warmed and little messes made. We doubt the need of anything like a kitchen in the ward. It is always a source of waste and bad odours, while every object strictly necessary can be obtained by a hot-plate and some gas contrivance. No ward is complete without an ample room provided with comfortable seats, and made agreeable by books, pictures, flowers, etc. In this room such patients as are able will spend much of their time, whiling away the dreary monotony of sickness in conversation, reading, and amusement. Whatever tends to raise the mind above the reach of that depression which is apt to follow the constant sight of suffering, and the constant dwelling upon one's own troubles, contributes to the great purpose of the hospital—the restoration of the patient.

These adjunct rooms are usually placed in one end of the ward, and there we find them in some of the present plans. It has always struck us that this arrangement does not promote the utmost facility of access, requiring, as it does, more steps on the part of both patient and nurse. Especially is it well to have the water-closets as easy of access as possible, for we may be quite sure that a distance of a hundred feet would oftener lead to a mischievous delay than fifty would. Impressed by this consideration, Dr. Morris places the water-closets partly at one end of the ward and partly at the other. A better arrangement than either would be to place them, together with all the other offices where foul air might be produced, such as the scullery and lavatory, in a projection on one side of the ward, midway of its length, and the nurse's room, dining and sitting-rooms in one on the other side. If they had a tower-like shape, they would improve the architectural effect. This central position of the offices is adopted, we observe, in Dr. Folsom's plan of an isolating ward. Dr. Smith would place most of these rooms in the basement, or in a separate building connected by a narrow hall to the ward.

The usual shape of the ward—that of a long parallelogram—Dr. Folsom would modify by bringing it nearer that of a square, as has been already done in some of the additions to the Massachusetts General

Hospital. Accordingly, in his plan of a common ward, he makes it 56 by 43 feet, for 23 patients, the offices being all placed at one extremity. He commends this shape for its "attractive, home-like character," as compared with the usual shape. Indeed, it seems to be rendered almost a matter of necessity where a large chimney-stack is carried up through the centre of the ward. It has the additional advantage, where this method of warming the ward is adopted—by open fireplaces—of promoting a better diffusion of warmth. Mr. Niernsee, the architect, is so favourably impressed with this shape, that he strongly advocates it, somewhat modified. He would cut off the corners and make an octagon of it.

The common belief, that the germs of disease adhere to the walls and thus make them sources of fresh disease, renders the inside finish a matter of the utmost concern. It is desirable, of course, that it should be so hard and smooth as to furnish the least possible hold for germs, and admit of the most effectual washing. Perhaps there can be nothing better than the ordinary finish made of good materials, and so thoroughly trowelled—as it never is at the present day—as to become, when dry, as hard as stone. The fashion of the day favours a coating of Parian cement, and Dutch tiles; and large slabs of glazed earthen-ware are also suggested. Some would plaster upon laths—stripping, or furring, as it is called—using the common hard finish, all which could be often removed and renewed with little inconvenience or expense. Whatever the material may be, the wall should present as few inequalities of surface as possible, in order to prevent the lodgment of dirt and facilitate washing. We scarcely need say that the walls should be hollow.

If there is any truth in the germ theory, the floors—as they generally appear, with wide cracks filled with dirt, and their surface covered with some oily material which no amount of washing and sweeping can deprive of the dirt that falls upon it—are far more calculated to propagate disease than the walls. The present treatment of floors may be traced to carpenters and builders, who scarcely trouble themselves with their sanitary relations, while few doctors have that sort of practical experience that would lead to much improvement. Holding so important a place in the surroundings of the patients, we venture to speak somewhat particularly respecting floors. Nothing is gained, that we can see, in having the boards very narrow, as it is a common fashion to make them. The inevitable shrinkage will leave smaller cracks than it does when the boards are much wider, but, in the aggregate, nothing is gained. This shrinkage no amount of sun-drying or kiln-drying will prevent. Dry them as perfectly as possible, they will imbibe moisture from the mortar and the atmosphere in the process of laying them down. There is only one way of meeting this evil. Let the boards, four or five inches in width, after being dried in the usual way, be laid down with just nailing enough to be kept in place, and after exposure for a couple of winters to the heated air of the house, when they will have shrunk their utmost, they may then be taken up and permanently relaid. Of course, they should be tongued and grooved, and pressed together by squeezers. In this way we may obtain floors forever free from cracks, and they are well worth the extra trouble. The common practice of oiling floors cannot be too strongly condemned. The reason given for it is that the pores of the wood are thus filled, and so rendered impenetrable to water. Whether it is so or not, what we do know is that the dirt adheres to the floor with a strength that defies all the arts of washing and scrubbing. The dirty, grimy, almost black ap-

pearance such floors always present, until with the lapse of time oil and dirt have both gone, is only repulsive to the nicely trained sense of hospital proprieties. Applications of wax, paint, and varnish are sometimes recommended; and if everybody in the service went about in cloth slippers, as they do in the foreign hospitals, nothing could be better; but with us they are soon defaced by the constant tramping of iron-heeled boots, and present an unseemly aspect. A floor of southern hard pine, laid as we have directed, may be kept as clean and bright as the driven snow by means of soap and water alone, but the soap must be of the best quality—not that heavy, resinous mass so much used—and the water sparingly used but frequently renewed during the process. A floor thus treated will need thorough washing not oftener than once in two or three weeks, and very little water will be required. Stains beyond the reach of washing may be effectually removed by the fore-plane, leaving no spot or mark behind. The floors of water-closets, and other places where much water is used, should be slabs of slate, or, what is better, slabs of thick glass. Urinals should be made of porcelain or glass, with a considerable amount of water always standing in them. In this way alone can they be rendered in the least possible degree a source of bad air.

The ward should be abundantly lighted, but we find no exact rule laid down for that purpose. Both Dr. Morris and Dr. Folsom commend the use of double windows for the sake of their non-conducting qualities. The latter would have the upper two feet separate from and independent of the lower part, “hung on hinges at the bottom, opening inwards to a limited extent, and provided with wings or sides of sheet copper, which convert it into a sort of hood when open; so that the entering air is directed upward to the sloping ceiling instead of sinking downward directly on the patient below.” Dr. Morris advises wide window seats of polished slate, and slatted shutters to moderate excess of light. We are inclined to think that a curtain of plain white muslin would answer the purpose as well, and free from the objections which obviously lie against the shutters. We respond most heartily, however, to his recommendation of outside awnings.

Dr. Folsom’s plan for an ordinary ward has a veranda seven feet wide, so arranged as to admit the sun at all times of the day, in which the patients can sit or move about in wet weather. We would also add that the patients should have access to an airing court provided with paved walks, comfortable seats, and water-closets. The more they can be kept out of doors, with proper regard to weather and their own condition, the better for them and the wards.

The prominent question of the day in the matter of hospital arrangement, the reader is aware, is whether the wards should be placed on the ground, each one by itself, entirely unconnected with every other, or one above another, two or three stories high. For so radical a departure from the prevailing method, and open to such obvious objections, as the one story construction is, its advocates offer what they regard as a conclusive reason. They believe, in common with the greater part of the profession, that in some diseases, certain morbid germs capable of reproducing the same disease in others, by contagion or inhalation, are thrown off, and, by the staircases and lifts, may be wafted to the wards above. By the proposed isolation of the wards, the danger of communication would be reduced to the smallest degree, and therefore this consideration should prevail over every other, in hospital construction. And so indeed it should if the object can be obtained in no other way. Dr. Morris believes that if

the wards be properly ventilated, and all unnecessary channels of communication between them avoided, they may be safely placed one over another. Indeed, this diffusion of noxious germs, he thinks, may take place in a lateral as well as in an upward direction, so that this source of evil may not be effectually prevented by the one-story plan. Dr. Billings says he has found no reliable evidence as to the unhealthiness of two-story buildings, and he favours their use for about 75 per cent. of the patients. This power of producing noxious germs is supposed to be confined to a few specific forms of disease, such as gangrene, pyæmia, puerperal fever, etc., and therefore it would seem as if the mischief resulting from their presence might be effectually met by a proper system of classification. Patients labouring under other forms of disease, such as phthisis, rheumatism, pneumonia, not possessing this quality, may, so far as this source of danger is concerned, be safely associated in two-story wards. Nor have we reason to suppose that they would be susceptible of infection, even though these germs of disease should be wafted into their wards. If then provision were made for these contagious diseases in one-story wards sufficiently remote from others, we should suppose the believers in the germ theory would, or ought to be, abundantly satisfied.

The objections to the one-story plan for all the patients, are so strong that it ought not to be adopted without a careful and intelligent consideration of all the circumstances. It may appear that it implies certain impediments and sacrifices that may more than balance the advantages which really belong to it. The more steps required by it must necessarily increase the difficulty of the service, and even detract from its efficiency. It is one of the common lessons of experience that the more accessible the scene of duty, the more faithfully will that duty be performed. The necessity of putting on overcoat and boots and shawl, may make the contemplated visit appear less urgent, and lead to its abandonment altogether. Every one too who has been conversant with the administrative duties of a hospital will tell us that the more concentrated the various parts of the establishment are, the more effectually can a proper supervision of the employés be maintained. The more remote they are from the eye and the ear of the chief, the greater will be the amount of their short-comings. And for a similar reason, that close habitual inspection of the service necessary to the maintenance of a high condition of the institution is much more likely to exist in a concentrated than in a scattered arrangement of the wards. Again, the one-story plan requires the use of ground that would be better put to some other purpose. For the most part, general hospitals are near the centres of population where land is dear and not plenty at any price. Much of it should be used for airing courts, and much must be for carriageways, the storing of fuel, stables, etc.

One of the results of recent experience is that during the warm season some of the patients may be treated in tents far more comfortably and successfully than in the wards. In them the germs of disease will be carried safely away, the ward may be relieved of some unpleasant cases, and thus be rendered more comfortable to those that remain. Room should never be wanting for this provision, even if it should lead to the sacrifice, more or less, of the one-story arrangement.

Dr. Folsom provides for four isolating wards, two for each sex, placed at the remotest part of the establishment, fitted with a range of rooms on each side 13 feet by 8 with a corridor between on which they open, with the adjunct rooms in the middle. Each room is furnished with a fireplace

arranged to burn soft coal, and has means of ventilation exclusively its own. His plan also provides for a private ward, arranged very like this, the rooms being 18 feet by 12. A ward like these may be seen at the Massachusetts General Hospital, exciting the admiration of the visitor, not unmingled, probably with a spice of pardonable envy. In the other plans, isolation is provided for in rooms placed in some remote part of the common ward. In them also rooms for private patients are provided more or less independently, near the central or administrative building.

The manner in which the pavilions are grouped together in the different plans, differs considerably, but they exhibit the common feature of communicating with the administrative building by covered corridors. In one they are attached, like currants on their stem, to each side of one long corridor running directly back from the centre. In another there are several corridors running in the same direction, with the pavilions attached to one side only. In another the corridors are two in number on a curved line, approximating at their extremities. In most of them facility of access is promoted by cross corridors running at right angles with those just mentioned. That each of these plans of grouping may have its peculiar advantages we do not doubt, but it is not easy to determine which, on the whole, meets the requirements of a hospital in the highest degree. We have had too little experience with this style of building—indeed, it can hardly be said that we have had any—to furnish any grounds of comparison. Opinions respecting their relative merits must be little better than conjecture founded on one's peculiar experience with the present methods, and therefore almost necessarily diverse. On one point they are all open to the objection that the ground is so crowded with buildings that the spaces between them are so narrow as to obstruct the transmission of light and the change of air; that these spaces can be used for no very good purpose; and that the close proximity of the buildings must necessarily be a source of much inconvenience. It hardly needs an argument to prove that the larger the space between one building and another, the better it can be turned to some useful purpose, or that no hospital can have too much continuous space for its various requirements. In Dr. Morris's plan, the pavilions are of two stories, and so connected that the whole structure forms the sides of two quadrangles. For any thing we can see to the contrary, this arrangement is exempt from the objections just mentioned as incident to the others, while it secures every advantage claimed for them. Instead of confining the out-look of the patients to two brick walls, it allows them an unobstructed view of the adjacent neighbourhood, which must help to draw off their thoughts from their troubles.

The barrack style of building—that is, cheap, rough, wooden structures—receives no favour, we are glad to see, from these gentlemen. It has been suggested by the idea that, as hospitals are inevitably destined to come under the influence of those noxious agents designated by the term *hospitalism*, when they become totally unfitted for their allotted purpose, the proper course would be to put up such structures as may be removed at a trifling sacrifice, the moment this mischief makes its appearance. The objections to which these are open are not far to seek. To give them a kind of finish compatible with the notions of propriety and fitness prevalent in our cities, would make them, after all, too costly to be readily sacrificed. For it must be remembered that hospitalism is no less incident to barracks than to more elaborate and expensive structures. The frequent taking down and building up implied in their frequent renewal would

be a source of extreme inconvenience, disturbing as it would the quiet and order that should always prevail in the grounds of a hospital. For peculiarly disagreeable and infectious cases, Dr. Folsom suggests that there should be kept in the cellar of each isolating ward, one or more "sectional buildings," made of pine wood, their different parts fastening together by hooks and bolts, so that they may be readily erected without the aid of a carpenter. The peculiar advantage of such buildings would be that after being used, they could be easily disinfected by exposure to the sun and air, and by smoking, painting, or varnishing. They are so simply constructed and so well calculated to meet the end in view that they are well worth a trial.

In the matter of warming and ventilating the wards—a matter of the first importance in the construction of hospitals—the arrangements proposed, we are happy to find, are eminently sound and judicious. They are not all equally definite and complete, but so far as they go they agree in all essential points. All are agreed in recommending open fires, to be supplemented when more heat is required, as it must be a considerable part of the time, by some arrangement in the basement for warming the fresh air before it is taken into the ward. Expressedly or tacitly, a cardinal point in the warming of hospitals is admitted by all, viz., that in cold weather the fresh air should be warmed before it enters the ward. Instead of having the fireplaces in the corners of the ward, as is the common way, Dr. Folsom prefers to have them aggregated together in one common stack in the centre, equally distant from the opposite walls. The warmth is thus better diffused, and consequently less is required, while Dr. Morris would have both. For the supplementary heat, which, in our winters must be the principal, we can have no better arrangement than that now generally adopted in our hospitals for the insane, and which is largely commended in the volume before us. Coils, or iron boxes with about a hundred feet, more or less, of radiating surface, are placed at several points, just beneath the floor, and over these filled with steam or hot water, the air must pass in its way to the ward. Steam is preferable, because it is generally provided for other purposes, and thus can always be obtained at a moment's notice. To place the coils in the ward itself, is a solecism hardly to be expected of the present generation.

These gentlemen, excepting Dr. Jones, who does not speak of the matter at all, are agreed, in regard to the necessity of some artificial form of ventilation, though Dr. Smith thinks that for "all detached one-story buildings natural ventilation should be relied on." Natural ventilation implies such an amount of air as can find its way through the doors and windows, amply sufficient, perhaps, when they can be kept open, but when closed as they must be the greater part of the time, we are unable to see how a sufficiency of air is to be obtained, whether the building be of two stories or one. How the air shall be renewed—the foul air removed and fresh air introduced—whether by a fan forcing in fresh air and thereby displacing an equal amount of foul air, or by chimneys heated by fires or steam-coils which draw out the foul air and thus by suction make room for fresh air, is a matter in regard to which we are, as yet, far from a united opinion. On this subject, Dr. Folsom's essay is entitled to particular notice, as he indulges in a more complete and elaborate discussion of principles and details than his associates. For a complete description of the methods of ventilation, which he adopts and which are somewhat complex, we must refer the reader to the paper itself, while we indicate

only its principal features. In cold weather, the fresh air passing among the steam radiators in the basement, as just described, obtains from the heat an ascensive power which must necessarily result in some displacement of the air already in the ward. Some of the foul air passes off up the chimney flues over the fires, while the rest is taken away through ducts leading downwards into the cellar, where it enters the chimney stack which is heated by the Franklin stoves in the ward or by a fire in the basket grate placed in the cellar. To meet the requirements of the changing winds, the fresh air is carried in by two ducts coming from opposite sides of the building, so that the one to the windward being opened, and that to the leeward closed, there will always be a full supply, whichever way the wind may blow. The one-story wards are also provided with ridge openings to be used when needed. The rooms of the isolating and private wards are ventilated by the window and chimney with which each is provided. "Natural ventilation," Dr. Billings says, "cannot be relied on in warm, still weather," and he might have added, nor in cold weather, and therefore, he recommends the use of a fan. Each pavilion, he thinks, should have its own heating and ventilating apparatus. Dr. Morris would rely chiefly on open fires in the corners of the wards and a heated chimney in the middle. He admits that these will not, at all times, meet the wants of the case, and therefore advocates the introduction of fans.

We are glad that the necessity of an artificial force in maintaining the ventilation of hospitals has been so clearly recognized in the volume before us, and we trust it will effectually dispel the idea somewhat fashionable just now, that natural ventilation, as it is called, is sufficient for the purpose. We fear that some of the arrangements here proposed are too complicated, and require a little too much "regulation," to insure the highest degree of success; and no contrivances, however ingenious, will prove effectual substitutes for that power which can be obtained only by a liberal expenditure of money. We regret that the experience and studies of the gentlemen did not enable them to prescribe the amount of ventilation required for the best sanitary results. Without knowing precisely how much fresh air is needed, and how it is to be introduced, it is not easy to see how the methods adopted can be successful except by chance. The proper relation between the artificial power acting by propulsion or suction, and the ducts by which the air is taken in and out, is a matter of mathematical calculation, and it is probably from a disregard of these preliminary inquiries that we have so many instances of an unsuccessful result. Indeed, until ventilation is studied with greater exactness, and the contrivances adopted are made to conform more closely to the rules and principles of natural philosophy, we ought not to be surprised, if in our attempts, we fail about as often as we succeed.

In the plans of the administration building—that which is used for all other purposes than such as are provided for in the wards—we find the utmost diversity of arrangement. Of course, they provide apartments for the officers, rooms for the directors, receiving rooms, rooms for the apothecary, operating and lecture rooms, kitchen, store rooms, chapel, etc. In the arrangements adopted reference is made less to sanitary requirements than to those notions of fitness and convenience, which spring from individual tastes and habits and former associations. It is impossible, therefore, to fix upon any plan that would be generally regarded as preferable to every other. While each and every one might have manifest merits, they all would be found, in practice, by somebody or other, to labour under

serious defects. Instead of concerning ourselves, therefore, with the size, location, and connection of the various apartments, it will be sufficient, for our present purpose, to speak only of such points as have considerable practical importance. As one of these, we believe that wards for private patients should be as near as possible to the administration building, if not a component part of it, because they require attentions that may not be faithfully given, except under the close, frequent observation of the officers. And this is the arrangement adopted in most of the plans before us. The location of the kitchen, whether in the basement, in the principal story, at the top of the house, or in a detached building, is one of those disputed problems not yet satisfactorily solved. Having the least possible faith in the efficiency of any known ventilating contrivances for carrying off completely the odours and vapours produced by cooking, we believe that the best result, on the whole, is obtained, by having the kitchen and bakery in a separate building, wherever it is practicable, or, at the least, in one having only a quasi connection with the rest of the establishment. For a similar reason, we would have the laundry and all its appurtenances in the same or a separate building. Indeed, we doubt if this work, in a hospital of 400 patients, can be performed elsewhere with equal ease and thoroughness. If we were to refer to a practical example most worthy of imitation, it would be to that of the Lunatic Asylum at Trenton, New Jersey, where, indeed, may be observed many other admirable arrangements for performing the work of administration.

The drift of opinion in the volume before us, if we rightly understand it,—for the gentlemen sometimes fail of that orderly expression of their ideas necessary to make their meaning clear—is towards a separate building for the operating and autopsy rooms, having convenient communication by covered ways with the wards and the administration building. This, certainly, is the better way, but, requiring, as it would, an additional outlay, it is not very likely to be generally adopted. Wherever placed, we hardly need to say that no expense should be spared to fit these rooms most completely for their respective uses. Especially, should all rooms where much patient work is to be done, be provided with the best possible arrangements for performing that work in an easy and satisfactory manner. The pathological room in the Boston City Hospital furnishes an admirable illustration of what may be done in this direction to make that attractive, even, which is usually rendered repulsive by its surroundings. Dr. Folsom's plans of a building for autopsies and other pathological purposes, seem likely to insure every desirable object, and are well worthy of attention. In this connection, he recommends an autopsy table contrived by Dr. Henry J. Bigelow, and used, the past year or two, in the Massachusetts General Hospital, where it has proved extremely successful. Its peculiar feature is that the leg on which it is supported is hollow, and thereby made instrumental for drainage and ventilation. The water and other fluids fall vertically to a trap in the cellar, while the air is drawn downwards into a flue that leads to a chimney. Rotation and other purposes are provided for by ingenious contrivances, all of which, we understand, are found to work well.

Besides the construction of the hospital and the arrangement of its various parts, the organization of the service, embracing all the employes from the highest to the lowest, receives especial attention from these gentlemen. Here too is a large field for diversity of sentiment, because each one naturally has his own way for using the instrumentalities placed under his con-

trol, and, probably, could use them more effectually so than in any other way. Some points, however, admit of no dispute. The true order of things in the management of any hospital necessarily implies certain functionaries who are essential to the highest measure of success. We are glad to see that all except Dr. Jones, who scarcely alludes to the matter, are agreed that the establishment should be put into the charge of a single individual whose authority should be paramount over everything and everybody except the medical and surgical duties, and be responsible for the manner in which the work of the institution is done. Dr. Billings expresses himself none too strongly, when he says he "considers this more important than almost anything connected with the hospital;" and Dr. Morris, no less impressed with the importance of this officer, dwells at some length on the qualifications he should possess. We would like to place before our readers his admirable description, but we can here only state very briefly the principal requisites and duties. Of course, he should be a medical man of respectable attainments, professional and general, patient of labour, ambitious to excel, with much force of character, and no little knowledge of men. Without performing any medical or surgical duty himself, it would be his constant endeavour to make those duties, as performed by others, as effectual as possible, for the highest skill would be deprived of its legitimate results without those dietetic and sanitary provisions which mark the difference between a hospital carefully and intelligently directed, and one allowed to take its chance without any direction whatever. He will see that the nursing is faithfully performed, that medicine is given as prescribed, that the food is what it should be, that air and heat are properly distributed, and, in short, that the habitual condition of the house meets every requirement of cleanliness, good order, and kindness. With such responsibilities as these, he should be allowed to appoint and discharge the nurses and servants, and he should have a voice in the appointment of the subordinate officers. We are surprised that Dr. Billings would not allow him to appoint his employés, since his power for good must be greatly curtailed if they considered themselves responsible to others, as they virtually would be if appointed by the directors. To our apprehension, if any arrangement more than another is calculated, by making him a mere figure-head, to insure the lowest, poorest condition of the service, it is this. In a hospital of 400 patients, there should be a steward or warden, who should have charge, under direction of the chief, of the strictly domestic affairs and the business outside of the house; he should keep the accounts, purchase the supplies, and look after the servants. There will be enough of such employment to occupy all the attention of a careful, intelligent, painstaking person. A matron or housekeeper should be entrusted with that class of duties which is usually assumed by the wife in a well-regulated household. She would superintend the washing and cooking, and, in conjunction with the steward, take care of the stores, and see that the wards have their proper supply of bed and table furniture. With the exception of this last duty, she would have in the wards no other. To insure the highest condition of the service in the wards, there should be a head nurse, of higher character and larger experience than such as ordinary nurses possess, who should have the immediate supervision of the nurses and attendants, see that the medicines are properly given, and the patients suitably prepared for operations. He or she, for there should be one on each side, should take care of and be responsible for the patients' clothing, ascertain their special needs, and in the absence of the medical officer, communicate with their friends. With

supervisors, as we may call them, of the right description, the service will be faithfully and intelligently performed; without them, an indefinite amount of short-coming can scarcely be avoided.

The trustees solicited the advice of the writers, "on the subject of *management*, with its numerous details of medical attendance, resident and occasional, nursing, domestic service, police regulations, etc.," and they have all, to more or less extent, responded thereto in suggestions sensible and judicious, by which the trustees will be greatly aided, we doubt not, in making their final arrangements. Dr. Morris especially, shows no fear of being too minute, fully appreciating, evidently, matters regarded too much as of minor importance. It does not disturb his professional dignity to remark that "there should be no dark corner or closet or hole of any kind anywhere. Every brush or pot and pail should be kept in an open and airy room, subject to inspection at any moment. Even the closets in which clothing is deposited should have open shelves," and he might have added, glass doors or none at all. For the most part, however, the rules and arrangements for regulating the customary administration may well be left to the officers of the hospital, governed, as they will be in their choice, by their own good sense and experience. It would be a great mistake to tie up their hands with rules founded on no very obvious contingencies and irrelevant to the special purposes of the institution. A generous freedom in this respect will make its return in heartier service and a finer sense of responsibility.

Mr. Hopkins also provided for a Home for coloured orphan children, for a hospital for convalescents, and for a medical school, and directed his executors to establish, in connection with the general hospital, a training school for nurses. On these several topics, except the first, the trustees solicit suggestions, and to some extent, some of the gentlemen have responded, though mostly in very general terms. In regard to a medical school conceived in this liberal style, there could scarcely be two opinions, especially when considered as a means for raising the standard of medical education. Dr. Smith anticipates from it a most salutary influence in this direction. Dr. Folsom believes that, "nominally and in organization," it will be better for both the hospital and the school to be distinct, and it will be well for the trustees to ponder this suggestion. Much may be said in favour of it, and much against it. Both he and Dr. Billings advise against placing the school very near to or very distant from the hospital, and the wisdom of the advice is obvious enough at sight. Neither can there be two opinions as to the benefits to be derived from a hospital for convalescents, for though it may be long before many hospitals are provided with this appurtenance, yet it cannot be left out of our picture of the ideal hospital. It enables the institution to do for its patients what every person would do, in his private capacity, for himself or his family. Of all restorative influences none accomplishes more good, in certain stages of disease, than removal from the city to the country. Several of the writers recognize the training of nurses as a proper function of the hospital, but they do not tell us with any degree of particularity how it is to be done. Either they have had too little personal experience to warrant them in thus speaking, or they consider it so dependent on circumstances that it may be safely left to the officers of the institution. It is agreed, however, that the nurses in training should lodge and take their meals in a building prepared expressly for them.

Appended to the essays are plans and description of the proposed Home

for Coloured Children, prepared by the architect, Mr. Niernsee. The same gentleman also furnishes studies for pavilions of an octagonal shape, accompanied by remarks showing forth the advantages of this form, and some practical suggestions respecting the construction of windows, walls, floors, warming and ventilation. Both these papers are evidently the result of much inquiry and thought, and are well entitled to a most respectful consideration.

The reader will have gathered from the style of our remarks, that we regard this volume as one of the highest practical value. It contains a fund of information and sound instruction on a subject where the inquirer has met too often with only uncertainty and doubt. And it comes, as we have already intimated, at a most seasonable moment, for during the next decade, probably, more hospitals will be established among us than in any previous period of much greater length. If any of them are built with little regard for the requirements of convenience or of the best sanitary conditions, it will not be for want of light. We cannot close this notice without expressing our conviction, that to the trustees of the Johns Hopkins Hospital the country owes a debt of gratitude for that liberal conception of their duties which has led to the preparation and publication of this elegant volume. I. R.

ART. XXIII.—*Extra-uterine Pregnancy: its Causes, Species, Pathological Anatomy, Clinical History, Diagnosis, Prognosis, and Treatment.* By JOHN S. PARRY, M. D., Obstetrician to the Philadelphia Hospital, etc. etc. etc. 8vo. pp. 276. Philadelphia: H. C. Lea, 1876.

NOTHING marks more emphatically the advance of a philosophic spirit among the votaries of medicine, than the decline of the sway of authority, and the substitution, whenever practicable, of a reliance upon principles deduced from facts. For a long time individual opinions of leading men ruled in the profession, as to points of practice as well as of theory. This was, of course, especially true in all the rarer forms of disease and accident. All questions as to the most judicious treatment of either were settled as well as possible by the dictum of those who, from the enjoyment of opportunity, had been enabled to acquire a relatively large experience in a given class of cases. As a matter of course, such not only differed from each other, but not infrequently were diametrically opposed. In the confusion incident to a difference of authorities, the physician suddenly brought face to face with one of the rarer accidents, was bewildered by these contradictory opinions, and compelled to trust to his own judgment alone.

Within the memory of those now in middle life, this difficulty having been recognized, attempts have been made to gather from recorded cases, what may be regarded as the collective experience of the profession, in certain of the rarer forms of accident, especially those to which the parturient woman is liable. The readers of this journal during the past thirty years have been made familiar with some of these efforts, and are aware of the favour with which they have been received by the profession.

The true function of statistics in medicine is now well understood. No

one any longer attributes to them infallibility. Even if a large number of facts are secured, each one has a personal quality unlike that of all the rest, which detracts from their fitness for comparison, and to a certain extent vitiates the result. Notwithstanding this drawback, however, recorded cases furnish the only material from which the experience of the profession, as a whole, can be learned, as to any given point in the natural history of disease or accident, or any point of practice.

One entering on such a task should realize that the treasures of individual experience contributed by the profession for the common good, are gathered by him that he may increase the fund of human knowledge; and that in the discharge of his self-appointed task he is under bonds for the faithful discharge of his trust.

The result of one of these studies is now before the profession in the book of Dr. Parry, upon that rare accident, extra-uterine foetation. Dr. Parry has collected five hundred cases, a careful analysis of which furnishes the basis of his undertaking. He has not confined himself to the tabulation of numerical results; but while furnishing these in regard to every important point, he has in coming to the conclusions derived from a study of his cases, exercised a judicial function. As the physician, after a due consideration of all the points of a single case, makes up his diagnosis and determines upon the treatment, so has our author, after a careful survey of the 500 cases before him, given us what appear to be the teachings that are legitimately to be deduced from them. Before entering upon a consideration of the contents of this book, we wish to record our admiration for the patient zeal exhibited by Dr. Parry in the collection of so many cases, and the discrimination and sound judgment with which his inferences have been drawn.

In his first chapter the causes of extra-uterine pregnancy are discussed. These embrace peri- and para-metritis, inducing constriction and displacement of the uterine appendages; and these have been recognized as causes by many authorities. Also, malformation of the internal organs, the gravid tube entering the womb at some point in the body or cervix. Among 500 cases, four examples of conception in hernial protrusions of the internal genital organs are recorded. It may occasionally be induced by uterine displacements impeding the passage of the ovum. Tumours of and near to the uterus, by obstructing the Fallopian tubes, may give rise to it. From a careful consideration of his cases, Dr. Parry is led to conclude that "we cannot deny the influence of strong emotions occurring during or shortly after intercourse," as a cause of this accident; but at the same time it is to be remembered, that it is much more frequently due to pathological changes in the internal sexual apparatus.

Women pregnant with a child outside the uterus frequently have shown a previous inaptitude to conception. This, as Dr. Parry says, though not generally known, on the analysis of a large number of cases, becomes very impressive.

As to the influence of age, the liability to that accident steadily increases from the age of twenty to that of thirty years. After reaching forty years the liability suddenly declines. The analysis of cases supports the statement, that extra-uterine pregnancy is most frequent in those who have borne several children; and that long-continued functional activity of the genital organs, and the diseases induced thereby, are not without influence in the production of extra-uterine pregnancy.

One of the most perplexing questions in the study of a case of extra-uterine pregnancy is the question of the age of the patient.

uterine pregnancy, is that of the class to which it belongs; and this is true after death as well as during life; consequently the literature of the subject abounds in statements that are utterly unreliable. Dr. Parry says we are not even in possession of data which will enable us to determine the relative frequency of the various species of extra-uterine gestation. Much has been written upon the subject, but tubal pregnancy is the only species about which all authors agree.

Our author, as we think, has simplified the subject by a division of the forms into three species: 1st, tubal; 2d, ovarian; 3d, ventral or abdominal; each species including two or more varieties. The probability is discussed very thoroughly, of pregnancy occurring in the ovary and in the peritoneal cavity; these have both been denied by high authority, but our author considers that they are established beyond reasonable question.

Chapters III. and IV. treat of the pathological anatomy of the accident. There are but three recorded *post-mortem* examinations of cases claimed to be of rupture of the cyst in the early stages of development. The history of only one of these is exact enough to furnish the information we seek. In this the most striking appearance presented was extreme vascularity of the reproductive organs, and even in this case the embryo was not found.

After rupture in the early months, the cadaver is exsanguined, the hemorrhage into the peritoneal cavity being generally very profuse. Our author finds that the amount of blood lost bears no proportion to the extent of the rupture; it being almost incredible that such frightful hemorrhage could result from an injury so small in extent. Our author states it as an interesting fact, "that hemorrhage from the rupture of an extra-uterine foetal cyst is much greater than that which follows rupture of the uterus." It seems, moreover, that a complete discharge of the ovum from the ruptured cyst is more favourable than its entire or partial retention.

Rupture of the cyst in the first months is not due, as has been supposed, to softening and sloughing from inflammation of its walls, but it is proved to be generally the result of distension produced by the growing ovum in an organ not adapted to its development, and which is not enlarged, like the uterus, by vital changes. It is the rule, for pregnancy of the tube, or at least that portion of it between the uterine orifice and the pavilion, to terminate in rupture previous to quickening.

In regard to the most interesting question of the nature of the vital connection between the embryo and the mother, our author states that in cases carefully examined, the vessels of the chorion were found to make their connection with the maternal tissues without the intervention of decidua. At this early period the villi are applied to the mucous membrane of the tube with which they contract adhesions, and the ovum is nourished by endosmotic action, and this is "aided by the presence of more or less plastic material."

In ovarian pregnancy the foetal sac is devoid of a peritoneal covering, the researches of Waldeyer having shown that the peritoneum is not prolonged over the ovary. Opportunities for post-mortem examination in early ventral pregnancy are very infrequent, but they reveal the chorion unsupported by any other tissue except at its point of attachment to the peritoneum.

The uterus in the early stages, is found more or less enlarged, with increased vascularity, and the cavity is often found lined with decidua; this is absent only when it has been discharged before death. The uterus

"prepares to do its work precisely as if the fertilized germ had entered its cavity." This is asserted by our author, after a careful review of reported autopsies, and of all the facts connected with the subject. He combats with vigor, and as it seems to us with perfect success, the opposite doctrine held by the veteran Dr. Robert Lee, and shows that the influence of the latter has unfortunately retarded the advance of knowledge on this subject.

The following summary is given by our author, of the results of his inquiries :—

1st. In all varieties of extra-uterine pregnancy, a decidua is formed in the uterine cavity as in normal gestations, but none surrounds the ovum.

2d. The decidua is rarely retained until the completion of gestation, but is thrown off during false labour. More frequently if the patient goes to term, it is discharged during the early periods of pregnancy in small fragments, and without pain, or expelled *en masse*, with symptoms of miscarriage.

3d. Absence of decidua, even at an early period, is simply proof that it has been previously expelled

The appearances in the latter months and after term are next described. Our author states that extra-uterine children frequently die before term, even when they are carried to it; but the rule is for them to live until the end of the ninth month, if the gestation is not terminated by rupture during its early stages. In these cases the child is by no means poorly developed, but may exceed the average weight.

The umbilical cord is always normal. The placenta is generally much broader and thinner than in regular pregnancy, "since the organ is frequently attached to structures which are by no means naturally vascular," and hence the extent of surface has to make up for deficient supply. At term, the womb itself, though enlarged, is not increased in size beyond that of the fourth or fifth month, and at this time rarely contains the decidua. There are other interesting points in connection with this subject which we must pass.

The symptoms of extra-uterine gestation are considered under three divisions: 1st, during the first months while the foetal heart is still inaudible; 2d, after the foetal heart can be heard until after the close of spurious labour at term; 3d, after termination of false labour or death of the foetus.

Our author thinks it important to keep in mind, that tubal gestation frequently terminates by rupture of the cyst before the fourth month; and that if pregnancy goes beyond that time, the probabilities are that it will proceed to the completion of the full term of gestation.

In consequence of the obscurity surrounding the symptomatology of the early stages, this class of cases "remains the opprobrium of obstetric surgery." Though it is claimed by some that there are no symptoms peculiar to extra-uterine conception previous to the third or fourth month, yet our author asserts, that while this is frequently "ushered in quietly enough, and during the first four or six weeks all may go well, after this time symptoms supervene, which in their violence are as unlike the signs of a uterine pregnancy, as the surface of a stormy sea is unlike that of a dead calm." For the first few weeks no warning occurs: when suddenly, the patient is seized with a violent pain in the hypogastrium, or in one iliac region, resembling colic. The surface is pale and cold, there may be vomiting, there is generally great tenderness at the seat of the pain. After a few hours, or a day, or more, the pain disappears, to return at intervals of a few days or weeks. Peritonitis has been invoked in explanation of the

severity and character of the pains, but our author maintains that this is a rare complication until after the end of the usual period of gestation, when it acts a conservative part by inducing adhesions that shut out the cyst from the peritoneal cavity. The true cause of the pain is to be found in the fact, that while the growth of the uterus in normal pregnancy is vital, an ovum arrested in the Fallopian tube distends it by mechanical pressure. It appears probable that the paroxysms of colicky pains are produced by contractions of the foetal cyst. In the first stage, irregular hemorrhage from the vagina, metrorrhagic in character, is another symptom. The expulsion of the decidua may occur in a mass, and be regarded as the result of miscarriage. The uterus is increased in size, and may be found out of its place. A tumour may at this stage be discovered by the side of the uterus, and in this the presence of a foetus has been recognized by ballottement, as early as the end of the first month. Our author suggests that Dr. Noeggerath's plan of examination by the finger introduced through the urethra into the bladder, may be very useful in the diagnosis of these cases.

In the second period the foetal heart is heard. On approaching term the child frequently dies. The mother's attention is attracted by violent, irregular movements of the child, which eventually cease. Inspection of the abdomen shows enlargement mainly on one side, and usually not of normal outline. The extra-uterine foetal cyst has been declared to be immovable. Our author has seen it movable as in ordinary gestation. Preternatural intensity of the sounds of the foetal heart or the placental bruit has also been noted, and, when heard, these ought always to excite suspicion, and lead to a careful physical examination of the patient. By vaginal examination the uterus is often discerned with much difficulty; and its development will not be in proportion to the duration of the pregnancy. Late in pregnancy the post-uterine tumour may fill the pelvis. Enlarged vessels of the foetal cyst may be felt per vaginam strongly pulsating; and it has been asserted that the foetal pulse has been felt through the vagina. The exploration of the pelvic organs through physical examination of the rectum, by which our author doubtless means the manual method, is suggested as available in these cases.

In the third stage, if extra-uterine pregnancy is prolonged to the end of the normal period of gestation, it is the rule for pains, identical with those of labour, to come on. These may continue from a few hours to several days. In certain cases these are repeated at intervals afterward, even for years; and these are usually accompanied by discharges of blood from the vagina. An interesting and very important fact here stated is, that these pains rarely end in rupture of the cyst. This is contrary to the opinions of those who have previously written on the subject. Most writers, also, have dwelt upon the dangers of peritonitis; but this, according to our author, "plays but a small part in the pathology of extra-uterine pregnancy at this period of its development." Writers "have believed that it ought to be a frequent complication, and have therefore concluded that it was so." Rupture of the cyst into the vagina is proved to be of extremely rare occurrence. In the analysis of 500 cases, only four instances have been found of this termination of the labour, and not one of rupture into the peritoneal cavity.

The unfruitful labour is followed by secretion of milk in the breasts, having normal characteristics.

From these facts it appears, that "the victim of an extra-uterine preg-

nancy, at the close of the ordinary period of gestation, is in a state which approaches very closely to that of a woman after normal labour." The recognition of the fact that the woman's condition approaches so closely to that which follows normal labour, is extremely important. The failure to appreciate this truth, has led many accoucheurs to subject their patients to methods of treatment, which are proper only after the woman has been fully restored from her pseudo-puerperal state.

What are the effects of this labour upon the child? It is the opinion of a number of competent observers, that the life of the fœtus may be maintained for some time after the termination of the usual period of gestation. Our author discredits these observations, and is of the opinion that in the present state of our knowledge it seems more reasonable to believe that there was an error in reckoning.

In Chapter VI. the changes in the economy after the death of the fœtus are considered. First, the liquor amnii is partially or entirely absorbed. After this the fœtus becomes desiccated or mummified. Now, the woman is at any time liable to peritonitis, which is almost always subacute, and seems to prepare the way for the ultimate discharge of the child through the abdominal walls, rectum, vagina, or bladder.

In this chapter the symptoms of rupture of the cyst are fully considered. Not more than fifty per cent. carry the child to term; the remaining half of the subjects of extra-uterine pregnancy become victims of rupture of the cyst. This portion of the chapter is extremely interesting, and in it our author corrects errors of opinion entertained by those who have previously treated of the subject.

Chapter VII., entitled "Terminations and Mortality," contains much interesting matter, to which we can only thus allude. The remainder of the work, from Chapter VIII. to XIII. inclusive, is devoted mainly to the most important part of the whole subject—the Diagnosis and Treatment.

The history of extra-uterine pregnancy affords abundant examples of errors in diagnosis—made, moreover, by men of the highest experience. Diagnosis is considered under these three heads: 1st, before the heart is audible; 2d, from this period until the death of the child, before or after term; and, 3d, after the fœtus has perished.

In the early stages extra-uterine gestation runs a moderately uniform course. If the ovum is developed in an organ capable of undergoing only a moderate amount of distension, it will, according to our author, give rise to symptoms that will attract the woman's attention, and lead her to believe there is something unusual about her pregnancy. She has from the first a conviction that she has conceived. If with this there are colicky pains in the hypogastric or iliac regions, with collapse more or less profound, with or without syncope; if these occur in paroxysms, or have violent exacerbations at more or less regular intervals, with bloody discharges from the uterus, extra-uterine pregnancy should be suspected. If symptoms of abortion supervene, with discharge of decidua; or if the phenomena of rupture of the cyst follow the symptoms enumerated, she should be treated as if pregnant outside the uterus. "There is no other known condition," says our author, "which is attended with the peculiar assemblage of symptoms to which attention has been directed."

When these indications exist, it is the duty of the attendant to treat his patient as if the existence of extra-uterine pregnancy had been proved. We hope our author is not too sanguine in expressing the opinion that a more extended experience "will probably show, that the existence of mis-

placed gestation can be detected quite as easily, if not more easily, than normal pregnancy in its early stages."

In the absence of evidence of miscarriage or rupture of the cyst, the presence of a tumour by the side of the uterus should be sought for, while the patient is under the influence of ether, every care being taken to obviate, as far as possible, the tendency to vomiting thus induced. The discovery of a tumour by the side of the womb, in which the presence of a fœtus is proved by ballottement, removes all doubt. In consequence of the extreme thinness of the coverings the fœtus may be thus recognized much earlier than in normal pregnancy, as was done by Dr. Thomas.

During the first months extra-uterine pregnancy has been mistaken for pelvic inflammation. Our author gives the conditions by which they may be differentiated, and remarks that it is difficult to see how this mistake can arise. The fact that it has happened to the names quoted, ought to be taken, we think, as evidence of the great difficulty of the diagnosis. We are prepared to believe, however, that from the light thrown upon it by the labours of our author, these and kindred mistakes will hereafter be less frequent.

Our author admits that it may sometimes be impossible to distinguish between extra-uterine gestation and pelvic hæmatocele.

In the second period, the existence of pregnancy being determined, its extra-uterine character is rendered exceedingly probable by signs before enumerated. The introduction of the sound is justifiable at this stage, to determine if the enlargement of the womb conforms to the date of the pregnancy. Our author considers retro-uterine fulness associated with displacement of the os uteri forward and upward, even above the pubes, as of the greatest importance.

Extra-uterine pregnancy has been mistaken for normal pregnancy in the latter months of gestation. The error can be avoided by especial reference to the changes in the cervix compared with the size of the uterus; if these correspond, the child will be found within the uterus. An instance has recently come to our knowledge, in which normal pregnancy at the third month was mistaken for extra-uterine pregnancy, by a consultation of physicians that included one of our most eminent authorities; abortion subsequently occurring at the fifth month.

Extra-uterine pregnancy may easily be mistaken for retroversion. The means of distinguishing the one from the other are given. The diagnosis is declared to be often very difficult, but our author assures us that "errors are more frequently due to want of observation than to want of knowledge."

After the child has perished, and months or years have intervened, the diagnosis may be very difficult. In cases of doubt, the fœtus being dead, the trocar has been employed to draw off a portion of liquor amnii to confirm the diagnosis. This practice, we are assured, cannot be too strongly condemned; "neither the trocar nor the aspirator can be safely used for diagnostic purposes."

In reference to prognosis it may be said, that, although rupture of the cyst may end in recovery, yet it should for all practical purposes be regarded as fatal. The prognosis in the ventral variety is the best of all. If the middle of the fourth month is reached in safety, she will probably go to term. At term, when false labour comes on, the prognosis for a time is more unfavourable. After passing the pseudo-puerperal state

"the retention of an extra-uterine foetus is not incompatible with a long and useful life."

We come now to the treatment. In the first period, this may be considered as palliative and curative. The colicky pains must be relieved by opium, anæsthetics being objectionable from the danger of vomiting.

Since in tubal gestation the rupture of the cyst may be looked for before the end of the fourth month, it has been proposed to destroy the foetus as early as possible. One of the means suggested for the accomplishment of this end is extirpation of the cyst by abdominal section. The great difficulty in the way is that of diagnosis. If ovarian or tubal pregnancy could be positively diagnosed, our author thinks the operation would be perfectly justifiable, as probably giving the patient a better chance than she would have from rupture of the cyst. Puncture of the cyst with a trocar or aspirator does not hold out any hope of success; only one woman out of seven, upon whom the operation is reported to have been performed, having recovered. Another plan is removal of the embryo by section of the vagina with the galvanic cautery, after the plan adopted in the very bold and original operation lately performed by Dr. Thomas. This, it will be observed, is but one of the modes of extirpating the sac, the impediment to which is, as we have seen, the difficulty of diagnosis. Dr. Thomas hoped to avoid peritonitis, by opening the sac, by an incision made between the folds of the broad ligament. He hoped also to avoid septicæmia, by the removal of all of the contents of the cyst, the placenta included. The attempt to remove the placenta was followed by great and alarming hemorrhage. Our author makes the very important assertion that in all these operations, the placenta should be left *in situ*: since experience has proved that "the danger of immediate hemorrhage from its removal is greater than that of secondary hemorrhage and septicæmia, which may result from allowing it to remain."

The suggestion of Cazeaux that electric shocks might be employed to destroy the life of the child has been put in practice; and also the injection of narcotics into the cyst for the same purpose.

As a summary of these various methods our author states, that "facts now in our possession indicate that the child ought to be removed entire, or the cyst allowed to remain uninjured. While not condemning the injection of narcotics into the cyst, he would prefer the electric shock as practised by Dr. J. G. Allen, or would attempt the removal of the cyst after the plan of Dr. Thomas. The avoidance of wounds of the cyst is insisted upon, since, as the hope of restoring the woman to health depends upon the conversion of the immature child into an innocuous mass, by gradual desiccation, it seems reasonable to believe that this can be best done by preserving the integrity of the cavity which contains it.

Treatment of rupture of the cyst in the early months is next taken up. Our author considers that the hopelessness of the condition of a woman under such circumstances has no parallel in surgical accidents. "In this accident, if in any, there is certain death."

The only remedy that can be proposed is gastrotomy. No person has yet performed the operation for the relief of this accident. The great difficulty is the diagnosis. Our author claims that if the symptoms of extra-uterine gestation above considered are followed by the indications of rupture, the diagnosis is so reasonably certain, that "the performance of gastrotomy is imperatively demanded." After advocating the operation quite at length, he concludes, that "it appears simply criminal to sit idly

by and see a woman die from rupture of an extra-uterine cyst, without attempting to save her."

If the patient has passed the fourth month, and labour at last comes on, the pain is to be relieved by opium in large doses. No operation is to be performed unless the cyst has ruptured, or the mother's condition becomes desperate. If rupture of the cyst occur, the condition is analogous to rupture of the womb, and there can be no doubt about the propriety of gastrotomy.

The gross results of gastrotomy in this class of cases, as shown by statistics, are not very satisfactory; but our author draws attention to certain circumstances, which, until a very recent period, have influenced the selection of cases, and have doubtless modified the results. The prospect of saving the life of the child ought not to be taken into consideration, and the primary operation cannot be too emphatically condemned. In proof of this, if we compare the mortality of cases left to nature with those following primary gastrotomies, that of the former class is 52.65 per cent., while that of the latter is 70 per cent., or 17.35 per cent. greater than if they had been left to nature.

A few writers have recognized the fact that a woman should be allowed to regain her non-puerperal condition, as nearly as possible, before being subjected to the operation.

The mortality following the secondary operation, that is, months or even years after the termination of pregnancy, stands 38.88 per cent., or as compared with those left to nature (52.65 per cent.), 13.77 per cent in favour of the operation. Our author believes that the cysts "ought not to be meddled with in any way, either by puncture or incision, until suppuration has occurred, and an abscess fistula has been formed." The operation is thus "degraded from the important and dangerous procedure gastrotomy, to the simple and not dangerous performance of opening a large abscess."

Important suggestions in regard to the details of the operation are the subject of the next chapter.

We have presented a sufficient outline of our author's work to make it clear that he has made a very important contribution to obstetric literature. Facts of this class necessarily accumulate slowly, and it will be many years before a sufficient additional number can be recorded, to modify, in any important degree, the deductions from those already before the profession. Dr. Parry's book, therefore, is destined to be long consulted, and deservedly too, as the highest authority in this obscure and difficult class of cases.

J. D. T.

ART. XXIV.—*Phthisis: Its Morbid Anatomy, Etiology, Symptomatic Events and Complications, Fatality and Prognosis, Treatment and Physical Diagnosis. In a series of Clinical Studies.* By AUSTIN FLINT, M.D., Professor of the Principles and Practice of Medicine and of Clinical Medicine in the Bellevue Hospital Medical College, &c. 8vo. pp. 446. Philadelphia: Henry C. Lea, 1875.

THIS volume, we need hardly say, is a very valuable contribution to the literature of phthisis, coming as it does from so distinguished an observer as Dr. Flint, and being based upon the recorded histories of over six hun-

dred and seventy cases of the disease. The point of view, however, from which a physician looks at a disease, must necessarily influence the opinions he forms of its pathology, as it insensibly gives a certain direction to the questions he asks when examining a patient. It is difficult otherwise to explain the very different conclusions which have been announced by different authors in regard to the connection existing between inflammation and the destructive processes of phthisis. Dr. Flint's deductions from his cases afford no support to the theory of the inflammatory origin of phthisis. In only nine out of the whole number of cases is pneumonia noted to have occurred as an antecedent disease, and in three of these cases, he says, the interval between an apparent recovery from the pneumonia and the development of phthisis, renders it probable that there was no pathological connection between the two diseases. Moreover, in not one of the large number of cases of pneumonia which have fallen under his observation, is there any reason for believing that phthisis followed as a sequela. He quotes Louis' remark, the correctness of which his own experience has shown, that when persons already tuberculous are attacked with pneumonia, the termination is generally in recovery. These are facts which testify strongly in favour of the view that the danger of pneumonia, "meaning thereby the ordinary lobar form of pneumonia inflammation," being followed by phthisis, is extremely small. This is a conclusion with which Niemeyer would have agreed; in fact he has said substantially the same thing in his work on *Practice*. He contends, however, that there is another form of pneumonia to which he gave the name of catarrhal, and of which phthisis, he believed, is not infrequently a sequel. This form Dr. Flint evidently does not admit.

A positively protective influence against phthisis is attributed by the author to pleurisy, especially when accompanied by effusion. In reference to the analysis of his cases on this point, he remarks, "the histories afford ground for the supposition, that whatever influence the pleurisy may have had was salutary rather than otherwise; in other words, the histories, in most of the cases, are consistent with the belief, that by means of the compression of the lung, in some way or other a pleuritic effusion may arrest or retard the progress of phthisis." This opinion is, we believe, very generally held. It is at variance, however, with one we have often heard the late Dr. W. W. Gerhard express in his clinical lectures at the Pennsylvania Hospital. This accomplished physician was accustomed to say, that in his experience, pleurisy had more often been followed by phthisis than lobar pneumonia.

Dr. Flint's cases afford no evidence whatever, he says, that bronchitis has a causative influence in the development of phthisis. With a single exception, in no instance did the character of the cough, at its commencement, show that bronchitis existed as an antecedent affection. The reviewer has, as the result of a fair opportunity for the study of phthisis, come to a very different conclusion. As he has put his views on record recently, it will not be necessary to go into a full discussion of this point. He thinks, however, that Dr. Flint dismisses the subject too summarily when he says that the statements of patients, who date the beginning of their cough from some particular exposure, such as being out of doors in inclement weather or getting wet, have little or no value. In several of the cases which have come under his care, the reviewer has been able to obtain from patients of fair intelligence, so distinct a

extension of inflammation due to the irritation set up by blood which had found its way to the air cells. We suspect, moreover, that the number of cases in which Dr. Flint noted the occurrence of fever following hæmoptysis would have been larger, if the thermometer had been in general use earlier.

When speaking of laryngitis as a complication, the author says: "The chances of arrest of the pulmonary disease, or of its being non-progressive, and of a slow progress, are greater instead of being diminished when laryngitis occurs, provided, of course, that there is no difficulty in deglutition." On this point, Dr. Pollock¹ expresses what we fancy is the opinion of most of the profession, when he says that "the extension of the disease to the organ of the voice, although a much less frequent complication than diarrhœa, is a bad prognostic indication." In the whole number of cases which this gentleman analyzes, the larynx was affected in 8.66 per cent., but of those which attained the duration of four years, only 19 out of 300, or 6.33 per cent, presented symptoms of laryngeal imitations.

In reference to fistula in ano, Dr. Flint makes the following statement: "As regards the import of this event in prognosis, it would seem to be like that of chronic laryngitis, when this affection does not interfere with alimentation." His cases do not afford ground, he says, for the advisability of endeavouring to effect a cure of the fistula. Recovery took place in forty-four of the cases observed by Dr. Flint. In answer to the question, "What constitutes proof of recovery from phthisis?" he says: "If a patient with phthisis regains the condition of health which existed prior to the development of the disease, pertaining to weight, muscular strength, and general vigour; if there be disappearance of all pulmonary symptoms; if this restoration be maintained for a series of months; and finally, *if physical exploration of the chest discloses no signs of any morbid process in the lungs*, it is fair to pronounce recovery as having taken place." By the portion of this sentence which we have italicized, Dr. Flint evidently does not mean that the past existence of the disease cannot be recognized, for we find him saying on the same page: "Phthisis leaves within the chest permanent traces which are discoverable by physical exploration." In twenty-three of these forty-four cases, there was no medicinal treatment of importance, in some no remedies whatever having been taken, and in the other cases only some cough palliatives and simple tonics. In eight there was no material change in the habits of life.

In thirty-one cases, the disease was allowed to go on without any active interference in the way of either medicinal or hygienic treatment. "In so far as we may be authorized," says Dr. Flint, "to deduce from these cases conclusions, they are, that of 31 cases in which the disease is left to itself, 8, or nearly 26 per cent., will end in recovery; in 6, or a little over 19 per cent., the disease will become non-progressive for an indefinite period; and in a fraction over 51 per cent. the disease will end fatally after a duration ranging between six months and twelve or fourteen years." "These conclusions," he continues, "would be immensely important, as the basis for estimating the influence of treatment on the disease, were it proper to accept them as representing correctly the relative proportion of cases in which this disease tends intrinsically either to recovery, to become non-progressive, or to end fatally." Were they to be thus accepted, as he

¹ Op. cit. p. 75. Dr. William Marcet, in an article entitled *Contributions to the History of Laryngeal Phthisis*, says, "the prognosis is always serious."

well says, they would tend to discourage efforts in the way of treatment, for which no such good results can be claimed. In fact, if they prove anything, they show that treatment has no power to diminish the duration of the disease or its mortality. This is, it is scarcely necessary to say, not Dr. Flint's opinion, for among his conclusions we find that life is prolonged by hygienic measures and by the use of medicines, and especially by that of cod-liver oil. The class of cases in which no treatment is employed, is that in which there are no distressing symptoms, such as fever, cough, pain, and the like, for which the sufferer generally seeks relief at the hands of the physician. In other words, there is, in these cases, a remarkable tolerance of the disease, which consequently tends to run a very slow course.

Among the various hygienic measures which have been recommended in phthisis, the author thinks very highly of sea-voyages and of a change of climate, the latter partly in consequence of the change of habits which is often brought about by it. He recommends, where pecuniary or other reasons prevent the patient seeking relief in travel, that he should abandon, if possible, a sedentary and in-door for an active pursuit in the open air, having known the disease to be often arrested under these circumstances. Cod-liver oil he has found to have, as we have already said, the effect of slightly prolonging life. He does not consider the evidence in favour of the curative properties of the hypophosphites sufficiently convincing to recommend their employment. He does not object to the use of alcohol in moderate doses, but says it should never be pushed far enough to produce its exciting effects. There is very little said in the volume about other medicines; but the author takes occasion to say that a bad effect of the theory of the inflammatory origin of phthisis, may possibly be that those who have adopted it may be disposed to employ antiphlogistic remedies in its treatment. At a time when even sthenic inflammations are treated by restoratives, the danger from this source does not seem very great.

The concluding chapter in the book is devoted to the discussion of the physical signs and diagnosis of phthisis. To say that Dr. Flint has added very materially to the knowledge of the signs by which diseases of the lungs may be recognized, is to say what every reader of this journal is perfectly familiar with.

J. H. H.

ART. XXV.—*Experimental Investigation of the Action of Medicines.*

By T. LAUDER BRUNTON, M.D., Sc.D, F.R.S., M.R.C.P., Assistant Physician and Lecturer on Materia Medica and Therapeutics at St. Bartholomew's Hospital. Part I. Circulation. 8vo. pp. 87, iv. London: J. & A. Churchill, 1875.

THIS neatly printed volume of eighty-seven pages, with a short appendix, is a reprint from the *British Medical Journal*. The author is already favourably known as an earnest, skilful worker in the field of experimental physiology. He has given us in the present very readable and suggestive work, the results of a careful and critical induction from experiments scientifically performed upon the lower animals for the purpose of testing the action of various remedies.

To the clinician, as well as the physiologist, the *modus operandi* of medicines must ever be a subject of earnest inquiry. Nothing more thoroughly distinguishes the empiric, or the mere routinist, from the really educated physician than the manner in which he prescribes his remedies. The hap-hazard guesswork of the one contrasts forcibly with the calm, logical assurance of the other. Teachers of therapeutics have widely differed in their views as to the proper manner of presenting this subject to their readers or hearers. Some, regarding drugs as having reference exclusively to the sick, consider them only from the standpoint of disease; and they accordingly study their action merely in connection with the morbid states of the body. But this is evidently a narrow and distorted view, inasmuch as different diseases must differently modify the action of the same drug. Opium and mercury may be cited as illustrations that will readily occur to the reader. Others, more philosophically, propose to establish the normal action of drugs on the human economy by ascertaining, first, how they will affect the healthy organism: this being verified by repeated experiments, it will be comparatively easy to study the interferences caused by this or that particular disease. Undoubtedly, the latter is the true method of studying the department of therapeutics. Here we have a solid, substantial basis to build upon; and it is to this method that the researches of our most distinguished modern investigators have reference. Our author very aptly compares it to the practice of the rifleman who, "before he stands sentry in the dark, must learn to shoot by daylight, when he can note the effect of each alteration in the position of his rifle on the course of the bullet."

Dr. Brunton most wisely regards a knowledge of the *pathology* of the disease as the corner-stone of rational therapeutics. In order to administer the right medicine, the physician must first know what is the exact morbid change, and where is its seat. This is a truism, but of what vast significance is it! He who has mastered this point may in truth be considered as master of the situation.

"We must trace every symptom which we see back to its unseen source: every flush on the cheek, every quickening of the pulse, back to the vaso-motor or cardiac nerves which have allowed the capillaries to become dilated, and thus produce the redness, or have permitted the heart to beat more rapidly than its wont. We must then inquire what has produced this alteration in the nervous system, and so on, till at last we have discovered, if possible, the hidden cause of the mischief."

We fully accord with the author in his definition of *pathology*:

"When I speak of the pathology of a disease, I do not mean those obvious alterations in the structure of an organ which we meet with in *post-mortem* examinations, but the so-called functional changes which precede and are the cause of both them and the symptoms."

He then cites, as examples, abscess of the liver and fatty degeneration of the kidney; in neither case is the obvious structural alteration the *real* disease; but this latter is "the alteration in the nervous and vascular systems, and in the nutrition of tissues, which we call the inflammatory process, and which produced the abscess and degeneration."

We have all probably been too much in the habit of drawing the line between what we term *organic* and *functional* disorders; whereas the truth is gradually becoming more accepted by pathologists and therapeutists—thanks to the microscopist—that every deviation of function involves necessarily a change in structure; so that all the so-called "func-

tional" diseases are to be treated as resulting from alteration of some tissue or fluid.

Under the head of *Pharmacology*, Dr. Brunton gives some valuable practical hints. Here, the first object is to ascertain on what particular structure the remedy acts. This cannot be effected by the hap-hazard exhibition of the said remedy to a man, sick or well. "By so doing we may, to be sure, find out what general symptoms it produces; and possibly from these, guess at the structure effected; but in order to convert our hypothesis into certainty, we must apply it to these structures and organs, and to these alone, and see whether the general result is the same; or we may prevent it from reaching them, while it is applied to all other parts of the body, and observe whether the effect is absent." Of course, as these experiments cannot be made on man, recourse must be had to the lower animals, —and *necessitas non habet legem*.

Treating of *Conditions of Health and Disease*, the author brings out some valuable old truths, which, however, lie at the very foundation of our science. As health consists in the due proportion between assimilation and decomposition and the removal of the waste products, it is vitally important that the "conditions of life" should be duly supported. The chief of these are oxygen (to supply combustion and evolve force), and a due amount of nutriment. Studying these "conditions" under the simplest forms of life—a single cell or a mass of protoplasm—we see at once the consequences of their withdrawal: "If oxygen be withheld, or the products of the waste be not removed, the combustion will cease, and the cell will die. If nutriment be withheld, the cell will begin to burn away." If the supply of oxygen and nutriment be insufficient, and the effete materials be only partially removed, "the cell may adapt itself to the altered circumstances," but in a deranged condition, and *disease* is the result.

Effect of Drugs.—If, as just shown, the nutrition of a cell—and consequently of an organ or system—may be altered by a faulty supply of oxygen and nutriment, it may equally be modified by the addition of various drugs to the nutrient fluid; thus, "a weak solution of alkali may increase or diminish the rapidity of the changes which it undergoes, by hastening the removal of waste products if they be acid, or retarding it if they be alkaline; while a weak acid will have an opposite effect." Other substances may arrest the changes altogether "by forming a firm compound with the substance of the cell;" while others again would seem to produce merely a temporary impression on the organ, but passing out and leaving it in its primitive condition. But even these temporary changes resulting from the presence of a drug, and which are usually spoken of as *functional*, the author is disposed to ascribe to a real, though not always demonstrable, "chemical or physical change."

The *Direct and Indirect Action of Drugs* is well illustrated by the author by the instance of curare. This substance, when given to an animal, paralyzes the peripheral ends of motor nerves (its *direct* action); but it may happen that the respiratory nerves may become paralyzed before the motor, in which case respiration ceases, the blood is not aerated, and convulsions occur as the result of the action of the retained carbonic acid on the nerve-centres; the asphyxia here is produced by the *indirect* action of the curare.

On the subject of *Dose*, we find some very suggestive observations. In the first place, we should distinguish between the ordinary dose that is administered by the stomach or other avenue, and the *actual* dose—"that

actually existing in the blood at any given time." It is the latter alone which is active; the balance is, for the time being, totally inoperative (except in the case of purely local remedies, as the mineral acids). We suspect that this truth is often lost sight of by the practitioner; it should certainly act as a check to immoderate dosing. Under this head we should remember the relation subsisting between the amount of the drug and the weight of the subject, "since an amount which is a small dose for one person is a very large one for another." "The dose of the drug must therefore be regulated by the weight of the patient; and thus women, being lighter, require a smaller amount than men, and children less than adults." This rule should specially be observed in experiments upon animals—to proportion the size of the dose to the weight of the animal.

The subject of the *absorption* and *elimination* of medicines is one of profound interest and importance to the therapist, but it can only be alluded to here very cursorily. The reason of the exceedingly rapid effect produced by injecting the substance directly into the blood, is because the whole of it mixes with the blood, and becomes active immediately; and this effect continues until excretion is established; whereas by the other routes of entrance (especially by the stomach) the process of absorption being comparatively slow, that of excretion commences immediately, and goes on with the former, "and thus part of the drug is passing out of the blood, while another part is being taken in." Moreover, the "actual dose" always bears a distinct proportion between the amount absorbed and the amount excreted; it is, in fact, "the difference between that absorbed and that excreted in a given time; and absorption may be so slow, or excretion so quick, that there is never a sufficient amount of the substance in the blood to produce any effect." On the other hand, if the absorption be rapid, and the excretion slow, the maximum effect of the drug will be obtained. This (in passing) affords us a valuable hint in the treatment of cases of poisoning, viz., *to prevent absorption and promote elimination*. The main channel for excretion is, of course, the kidney; and hence the practical importance of inspecting the urine in all cases of suspected poisoning, especially mineral. The other routes of excretion, as is well known, are the lungs, skin, salivary glands, and liver.

As the rapidity of absorption varies materially with the tissue to which the medicine is applied, the dose must be correspondingly varied. According to the author, "absorption is quickest from a serous membrane; then from intercellular tissue, and lastly from mucous membrane." This is undoubtedly true for liquids; but, for gases and vapours, the absorption is most rapid from the respiratory *mucous* surface, as is familiarly witnessed in the rapid anæsthesia produced by the inhalation of ether, chloroform, etc. The relative rapidity of the absorption and elimination of a drug will satisfactorily explain what is termed the *cumulative action* of medicines. Remembering that it is only the "actual dose"—that which is actually circulating in the blood at a given time—that produces any effect, it is easily understood that if repeated doses of the same substance be given before the preceding one has been completely excreted, the amount present must gradually increase, and, of course, its action be intensified. On the other hand, the very rapid elimination of some substances by the kidneys, lungs and skin, may prevent this accumulation in the blood, and occasion a proportionately transient effect, as in the case of alcohol and curare. Hermann's experiment with the latter drug demonstrated that the cause of its inertness when taken into the stomach was

owing to the rapidity of its excretion by the kidneys; for "by tying the ureters (whereby this elimination was prevented), the animal became paralyzed as surely as if the poison had been introduced at once into the veins, though not so quickly."

The *Effects of Habit, Climate, Fasting, and Form of Administration*, are very briefly discussed by our author, although with sufficient precision for his present purpose. He ascribes the differences in the action of medicines resulting from *constitution* and *idiosyncrasy* as being really due "to differences in absorption and excretion, or to the different relative development of other parts, especially parts of the nervous system."

The important question is next discussed, "How far conclusions as to the action of medicines on man may be drawn from those which they exert on the lower animals." He evidently adopts the affirmative side of the proposition, and adduces in its support the action of curare in paralyzing the ends of motor nerves as being identical "in the Indian who accidentally wounds himself with his poisoned arrow, in the game which he shoots, or in the frog on which we experiment. Motor nerves, the structures on which curare acts, are alike present in all, and in all are its results the same." He admits that the action will be alike only "when the organs and structures on which a drug acts are similar in man and the lower animals; and that variations will be observed just in proportion to the difference between his structure and theirs;" and inasmuch as these differences of structure are not always susceptible of demonstration, "we ought to test our conclusions as to the action of remedies by giving them to a healthy man, and observing whether their effects are such as we have been led, from our experiments on animals, to expect."

Finally, under this head, the relationship between the *Chemical Constitution and Physiological Action* of medicines is briefly discussed. If a change in the constitution of the living cell may change the operation of a medicine, there can be no reason to doubt that a change in the constitution of the drug itself must produce a variation in its effects upon the system.

Chapter II. introduces us into the field of experiment. The leading idea of the author is "to *localize* the action" of the drug employed—"to be able to say with certainty, This is the organ on which this medicine acts, and such is the action which it exerts upon it." One of the methods of effecting this is by experimenting on a highly organized animal resembling man in its general structure, "allowing the medicine to act now on one, and now on another part of the body, but never on all at once, till we find out those parts for which it has a particular affinity." A timely caution is here interposed, not to confound the observations of the experimenter with his conclusions; since, while the former may be quite correct, the latter may be erroneous. Of course, to be of any real value, each experiment requires frequent repetition. Another practical caution to the experimenter is, that "he should note down the results at the time, and not trust afterwards to his memory" to recall them.

The methods are given for studying the action of drugs on Protoplasm, Vibriones, and Bacteria, on Fungi, on Fermentation and Putrefaction, on White Blood-corpuscles, and on Inflammation; and the results of the different reagents are noted, together with some therapeutic deductions.

In the *administration of drugs* to animals, among the different methods employed, the preference is, we think, very properly given to the subcuta-

neous injection, as being the most certain in its results, and also easy of practice.

Under the head of *Interpretation of Results*, we meet with such fair logical deductions as the following: "If we find that voluntary motion is increased or lessened by the experiment, we may naturally conclude that the activity of the cerebrum is increased or diminished." "Unsteady movements, paralysis, or convulsions, impaired reflex action on pinching, or stoppage of respiration before the heart, point to the spinal cord, to the nerves, or to the muscles; while quick or slow, strong or weak pulse, or stoppage of the heart before respiration, point to the vaso-motor system, or cardiac nerves; increased or diminished secretion, to secreting nerves, etc." In cases where the drug used is poisonous, it is always proper to ascertain its *minimum fatal* dose; and also calculate this dose for every pound weight of the animal.

The rest of this chapter is occupied with a description of the various "modes of securing animals" for experimentation, with diagrams of the necessary apparatus required—such as Czernak's rabbit-holder, Bernard's and Brunton's holders for dogs; also the modes of making glass canulæ and tubes for a variety of uses in such experiments. As regards the best method of narcotizing animals, before experimenting upon them (which operation considerations of humanity should always, if possible, lead us to practise), Dr. Brunton recommends opium and chloral; and curare, when it is desired to render the animal perfectly motionless. The difference in the action of the various narcotics on animals is discussed and illustrated, and their proper dose and mode of administration noticed.

We have next described the proper method of injecting fluids into the bloodvessels; the mode of division and irritation of nerves; the proper method of performing artificial respiration on animals, and of introducing gases and vapours into their lungs.

Chapter III. describes *Artificial Circulation of Blood, warm and cold*; and *Investigations on Blood-pressure*. Under the former head our author notices Prof. Ludwig's curious experiment of injecting cold blood into the vessels of the muscle of a warm-blooded animal, immediately after it had been removed from the body; the muscle will retain its irritability for a long time, just like that of the cold-blooded frog.

The *Influence of Nerves on Blood-pressure* forms an interesting and instructive portion of this chapter. Several distinct parts of the nervous system are concerned in the circulation, as follows: 1. "The *cardiac ganglia*, which lie in the walls of the heart, and are, in all probability, the cause of its rhythmical action." 2. "*Inhibitory nerves*, which render action slow, and, if irritated very strongly, may stop its beating altogether." "A drug may irritate these nerves, and render the heart's action slow in various ways. . . . Drugs may also paralyze the inhibitory fibres, and thus quicken the heart." 3. "*Quickening nerves*, belonging to the sympathetic system." These also may be irritated by drugs, both directly and indirectly. 4. "*Vaso-motor nerves*, which cause the small arteries, and probably also the capillaries, to contract." These belong to the sympathetic system. "The most important of them are the splanchnics, which produce contraction of the intestinal vessels." . . . "The centre of the whole vaso-motor system seems to be the medulla oblongata; and it is generally in constant action, keeping up a certain amount of contraction or tone in these vessels." This contraction may

be increased by direct stimulation of the nerve-centre, and by reflex irritation through the cervical sympathetic, the vagus, and sensory nerves. 5. *Vaso-inhibitory nerves*. "Irritation of these nerves is conducted to the vaso-motor centres, and acts on them in such a way as to cause a reflex dilatation of the small vessels either through the whole body or in one particular part of it."

As the action of drugs upon the circulation is the main object of the author's investigation in the present essay, he naturally devotes the bulk of his remarks to *experimental examination of blood-pressure*. He describes in detail what he conceives to be the best form of the manometer, one form of which, termed *kymographion*, is a self-registering instrument, complex in its construction, and very different in appearance from the original simple contrivance of Hales, and the bent-tube mercurial hæmadynamometer of Poiseuille.

Chapter IV. is replete with most interesting and suggestive experiments, made to determine the true means by which drugs affect the heart and vessels. First of all, a careful comparison is made, by means of the kymographion, of the effects of the drug in question on different animals. Then, by induction from most careful experiments, important conclusions are arrived at in relation to the real structures affected by the drug, as, *e. g.*, the vagus, the sympathetic, the cardiac, and other ganglia; and for all these structures the very important question is settled, whether the action of the medicine is direct or reflex.

The unquestionable physiological antagonism of atropia and physostigma within certain limits, as previously shown by Dr. Fraser, is alluded to by the author for the purpose of indicating a valuable rule in therapeutics, viz., in the treatment of such diseases as have their origin in morbid matter introduced into the system, and consequently, in cases of poisoning, we are not always to wait to eliminate the noxious agent from the organism (though, of course, this is highly important), but we should seek to neutralize and render it innocuous even while still present in the system.

Various other topics kindred to those above mentioned are discussed by the author in this chapter, to which we cannot, at present, bestow even a passing attention. From what we have already indicated, our readers will readily admit that there is much in the present volume that will amply repay an attentive perusal; and to such as wish to cultivate this most interesting but difficult branch of physiological and therapeutical research, we confidently recommend Dr. Brunton's book for careful study. We shall look with much pleasure for the appearance of the succeeding portions of his work.

J. J. R.

ANALYTICAL AND BIBLIOGRAPHICAL NOTICES.

ART. XXVI.—*Medico-Chirurgical Transactions*. Published by the Royal Medical and Chirurgical Society of London. Volume the Fifty-eighth. 8vo. pp. lxxviii., 393. London: Longmans, Green, Reader, and Dyer, 1875.

IN accordance with custom, we purpose offering to our readers some account of the various papers embraced in the present volume of this excellent series, considering first those which are specially addressed to *surgical* practitioners, and subsequently those which are more distinctively of *medical* interest.

The first paper describes a remarkable *Case of a Foreign Body impacted for twenty months in the Female Pelvis; Recovery after its Removal*; and is contributed by RICHARD BARWELL, F.R.C.S., Surgeon to Charing Cross Hospital. The patient was a young, unmarried lady, whom Mr. Barwell saw in consultation with her ordinary medical adviser; the latter had been called in fifteen months previously on account of severe pain in the left hip and thigh, which the patient ascribed to sciatica, but which her physician regarded as due to some deep-seated cause of irritation, the nature of which he could not discover. Eleven months afterwards he was again consulted, and found the patient suffering from an abscess over the hip; and now, by questioning, ascertained that some months before his first visit she had had an abortion produced by the introduction of an instrument (supposed to be an elastic catheter), which was left in position, and which a few hours later disappeared within her body. Mr. Barwell opened the abscess, evacuating a pint of very offensive pus, mixed with intestinal gas, and a few days later, by careful exploration by both rectum and vagina, succeeded in discovering a foreign body, which he could just touch through an opening in the bowel, and which, with some difficulty, he withdrew through the anus. The foreign body proved, as had been suspected, to be an elastic catheter, which had lain for twenty months in the areolar tissue, between the uterus and rectum. The abscess healed rapidly after the operation, and in less than two months the patient was quite restored to health. Mr. Barwell supposes that the catheter had been introduced, armed with its stilette, and had been pushed directly backwards through the posterior uterine wall into the adjacent connective tissue.

The next paper is entitled *Cases of Syphilitic Re-infection; with Remarks*, and is from the pen of a gentleman whose recent death has been a source of regret to the medical profession in other countries as well as in his own. Mr. GEORGE GREEN GASCOYEN, F.R.C.S., Surgeon to the Dock Hospital, Assistant Surgeon to St. Mary's Hospital, etc. A report of Mr. Gascoyen's communication has already appeared in the *Monthly Abstract of Medical Science*, for February, 1875 (p. 67), which is seen by most of our readers, and we shall not, therefore, dwell upon it further than to say that several of the author's cases seem to us quite inconclusive. That a second attack of syphilis may occur we are, of course, prepared to admit; but that such an occurrence is as common as supposed by Mr. Gascoyen, we cannot believe. We have no doubt that some at least of his examples of supposed re-infection were really nothing but

fresh outbreaks of old constitutional disease, accompanied by that most deceptive lesion to which Fournier has particularly called attention, the "*pseudo-chancere indurée*."

We shall next turn to a paper on *Urinary Crystals and Calculi; being Observations on some of the circumstances determining the Forms of Crystalline Deposits in Urine, and on some of the conditions under which Renal and Vesical Calculi are produced*; by WILLIAM MILLER ORD, M.B. Lond., F.R.C.P., Senior Assistant Physician and Lecturer on Physiology at St. Thomas's Hospital. In a paper contributed to the first volume of the new *St. Thomas's Hospital Reports* (see No. of this Journal for April, 1871, p. 523), Dr. Ord described some experiments relating to the forms assumed by uric acid under different circumstances, and showed that those forms varied according to the character of the fluid from solution in which the acid was thrown down. In the present communication he details the results of further investigations not only as to uric acid, but as to urate of ammonia, oxalate of lime, and triple phosphate also. We have not space to go into a full examination of Dr. Ord's paper, which seems to us one of much value, but must content ourselves with referring to a few points of practical importance. After showing that the actively changing colloids which enter into the matter of purulent mucus exert a strong converting and cementing influence on uric acid, and referring to the views advanced by Dr. Vandyke Carter in his work on the *Microscopic Structure and Mode of Formation of Urinary Calculi* (noticed in the number of this Journal for April, 1874, page 491), Dr. Ord says:—

"Two-thirds of all urinary calculi are in bulk composed of or start from concretions of uric acid. . . . To make calculi of uric acid without colloids would be as hopeless a task as making ropes of sea sand. Therefore, if the causes of the varying prevalence of calculous disease in different communities and regions are to be fully and usefully examined, such subjects as constitutional proneness or indisposition to vesical catarrh, habits of life, diet and regimen, or local conditions of soil, water, and climate which can hinder or promote the secretion of mucus, or the occurrence of irritation in the urinary tract, must be very carefully treated. And if such observations be applied to practice, we may hope to find that the prevention of stone becomes partly possible through the prevention of the local conditions which constitute the soil in which it is sown and grows."

And with regard to the formation of oxalate of lime concretions, the author says:—

"To mould oxalate of lime into calculi would seem to require denser colloids than are usually present in vesical urine, and it is probable that the beginnings of oxalic calculi take place in the recesses of the kidney among less diluted colloids. Certainly, in my own experience I have found the small calculi passed with so much pain from the kidneys much more frequently composed of oxalate of lime than are vesical and urethral calculi."

Dr. Ord's paper is accompanied with two lithographic plates, showing the forms assumed by urinary deposits under different circumstances.

The next paper is a very long one, occupying, indeed, one-fourth of the whole volume; it is entitled *A Case of Pulsating Tumour of the Left Orbit, consequent upon a Fracture of the Base of the Skull, cured by Ligature of the Left Common Carotid Artery subsequently to Injection of Perchloride of Iron after Digital Compression and other means of treatment had failed; with Remarks and an Appendix containing a Chronological Resumé of Recorded Cases of Intra-orbital Aneurism*; by WALTER RIVINGTON, M.S. Lond., F.R.C.S. Eng., Surgeon to the London Hospital. This is a paper of much excellence, and one which reflects great credit upon its author's industry and

powers of research. It constitutes the most valuable single contribution to the literature of its subject with which we are acquainted. Before entering upon an account of his own case, Mr. Rivington gives a sketch of the views entertained by previous writers with regard to the affection generally known as "intra-orbital aneurism," a name which, as he justly remarks, is really appropriate to but a very small number of those cases to which it is applied. Mr. Rivington's own patient was a man twenty-four years of age, in whom the symptoms of the disease were first manifested between six and seven weeks after the reception of an injury by which the patient sustained a fracture of the skull. Compression, both digital and instrumental, of the carotid artery; digital compression of *both* carotids; and direct compression of the pulsating tumour, were tried at different times during the following year, but with no benefit to the patient. The case being regarded as one of arterio-venous aneurism, a communication probably existing between the carotid artery and cavernous sinus, and it being feared, from the negative results of compression, that ligation of the carotid would produce but temporary improvement, it was determined to inject a solution of the perchloride of iron, in hope of obtaining obliteration of the dilated ophthalmic vein. Accordingly, five minims of a neutral, watery solution, of the strength of 28 per cent., were injected into the pulsating swelling below the orbital arch. Quite severe symptoms, both local and constitutional, followed the injection, and four days later it was thought proper to tie the carotid; this operation was accomplished without difficulty, and served promptly to reduce the swelling and tension of the parts, pulsation being immediately arrested, and the ligature coming away safely three weeks subsequently. Slight sloughing of the cornea occurred, leaving a patch of opacity, and the sight of the eye remained much impaired; but, with these exceptions, the patient when last heard from bore no traces of his disease.

We have not space to follow Mr. Rivington in his discussion of the various pathological conditions which may give rise to the so-called "intra-orbital aneurism," further than to quote his opinion that of recorded instances nearly all the traumatic cases have been examples of arterio-venous communication in the cavernous sinus, and that in idiopathic cases the most frequent condition has been the sudden formation or rupture of an aneurism of the internal carotid in the same locality. Mr. Rivington does not believe that the symptoms of "intra-orbital aneurism" are ever due to the existence of an aneurism by anastomosis or a cirroid aneurism, neither of which has ever been proved by *post-mortem* inspection to have occurred as an affection strictly limited to the orbit. As, however, these conditions do undoubtedly implicate the orbit secondarily, in some cases, we do not see why under such circumstances they should not merit the name of pulsating orbital tumours. The diagnostic mark by which to distinguish such cases from the ordinary forms of "intra-orbital aneurism," would appear to be that in the former the *globe* of the eye is not involved, and that hence exophthalmos and chemosis cannot be present.

The next paper which demands our attention is entitled *A Case of Left Subclavian Aneurism treated by Temporary Compression applied directly to the Artery in the First Part of its Course; with Remarks*; by ARTHUR FENAYSON MCGILL, F.R.C.S., Surgeon to the Leeds Public Dispensary; communicated by JOHN WOOD, F.R.S. Mr. McGill's patient was a woman, 35 years of age, and at the time of the operation had been suffering from aneurism of the left subclavian artery for nearly three years. Digital compression had been previously applied to the *third* portion of the artery without benefit, and galvano-puncture had been employed upon five occasions with temporary advantage, but with no effecting a permanent cure. Mr. McGill determined to try direct temporary

compression of the *first* portion of the artery (internal to the *scaleni* muscles), being encouraged as to the feasibility of the operation by the record of the case in which the late Dr. J. K. Rodgers, of New York, had tied the left subclavian in its first part (the only occasion upon which the operation had been previously accomplished), and hoping that by the use of temporary compression, rather than ligation, the risk of secondary hemorrhage would be in a great degree avoided. The operation proved to be one of great difficulty, the artery being displaced from its normal position, and in passing a Gibson's needle around the vessel the pleura was unavoidably wounded. Compression was effected by applying a pair of ordinary torsion forceps, which were allowed to remain a little more than six hours. The pulsation, which was absent when the compressor was removed, returned in a slight degree on the next day, but finally disappeared on the day following. The patient died (from pleurisy) on the sixth day, *post-mortem* examination showing that the aneurismal sac was entirely filled with a firm hard clot, and that the artery was quite healthy at the point of compression.

The last surgical paper is *On the so-called Partial Dislocation of the Humerus*, by EDMUND OWEN, F.R.C.S., Assistant Surgeon to, and Demonstrator of Anatomy at St. Mary's Hospital; communicated by GEORGE GREEN GASCOYEN, F.R.C.S. In this paper Mr. Owen describes four dissecting-room specimens which he has himself observed (the right and left shoulder-joints of two subjects), and compares them with the specimens described by Sir Astley Cooper and Mr. Soden, concluding that the affection described by the former writer as partial dislocation of the humerus, and by the latter as dislocation of the tendon of the long head of the biceps muscle, is in reality a lesion of rheumatic origin and not the result of injury. This view, it may be mentioned, is by no means a novel one, having been ably sustained more than twenty years ago by Mr. E. Canton (*Surgical and Pathological Observations*, London, 1855, pp. 18-28), and still earlier by Dr. R. Adams, of Dublin. As Mr. Canton's name is not even mentioned by Mr. Owen, it is a fair inference that the latter is not acquainted with the former writer's investigations.

As far as the surgical portion of this volume is concerned, we cannot consider it either as interesting or as valuable as some of its predecessors.

J. A., JR.

Two of the medical papers in the volume have been fully noticed in *The Monthly Abstract of Medical Science*. Having, therefore, been already laid before most of the readers of the Journal, we shall only mention them by name. The first is contributed by Dr. GEORGE JOHNSON, who has written *On the Laryngeal Symptoms which Result from the Pressure of Aneurismal and other Tumours upon the Vagus and Recurrent Nerves*. The second is by Dr. GEORGE THIN, and contains the results of his investigations into *The Pathology of Lupus Erythematosus*.

Dr. LEONARD H. J. HAYNE communicates some *Notes on an Epidemic of Malarious Yellow Fever occurring on board H. M. S. Doris, shortly after leaving Port Royal, Jamaica, May 18th, 1873*. The disease which he describes seems to have been a very severe remittent fever. In one case, indeed, black vomit occurred, but, with this exception, there were no symptoms which could not readily be referred to the former disease. Malarious yellow fever is described by Aitken,¹ who says, that it prevails, for the most part, in towns

¹ The Science and Practice of Medicine, by Wm. Aitken, M.D., etc., vol. i. p. 538, London, 1866.

situated on the sea or river coasts of alluvial countries, in warm climates. "The malarious form of yellow fever," he adds, "appears to be the product of that state of the atmosphere which takes place after a long continuance of solar-heat, with little or no wind, in those points chiefly where the atmosphere of the sea and that of the land are in constant communication and interchange."

Dr. C. THEODORE WILLIAMS contributes a paper *On the Temperature of Phthisis Pulmonalis, and on the Various Conditions influencing it*, in which he reports his observations made at the Brompton Hospital for Diseases of the Chest. The number of patients furnishing these results was 111; 66 of whom were males, and 45 females. The ages were from 13 to 49; the average of the males being 26, and of the females 27. In the greater number of cases, almost hourly observations were taken, and in eleven cases, an hourly record was carried out for twenty-four hours. The patients under observation were, for the sake of convenience, arranged in five classes, according to the stage of the disease and the activity of its progress: 1st stage, *active*; 1st stage, *quiescent*; 2d stage; 3d stage, *active*; 3d stage, *quiescent*. In the first class, the observations taken at 8 A. M. exhibit remarkably low temperatures; 51 per cent. being below 98°. They show a slight exacerbation at 10 A. M., and a consequent fall, and then a nearly continuous or slight rise from 2 P. M. till 8 o'clock (over 100°), when a rapid fall commences, which reaches its lowest ebb between 2 and 3 A. M. Temperatures of 94° and 95° were then not unfrequently recorded. In the second class the 8 A. M. observations indicated subnormal temperatures, the mean being 97.3°, the minimum 95.2°, and the maximum 98.5°. At 11 o'clock the temperatures were still low, the average being 97.9°. The observations at 2 P. M., showed a steady rise, which reaches its maximum at 5, an average of 98.7° being then attained.

In the third class the temperatures at 8 A. M. were somewhat higher than in the first and second classes; the mean being 98.1°, and the minimum 95.6°. At 11 o'clock a rise generally takes place, the mean being 99.1°, the minimum 96.8°. After this a steady rise generally takes place till 8 P. M., the mean being 99.6°, and the highest temperature recorded being 103.6°. The thermometry of the "active third stage" shows greater extremes than that of any other, and includes both the highest and lowest temperatures, the actual maximum being 104.6°, which may be arrived at any hour between 5 and 10 P. M., and the minimum being 93.6°, which is generally observed at about 2 A. M. In the fifth class, of the 8 A. M. temperatures 60 per cent. fall below 98°, the minimum being 95°, the mean 97.7°. The 11 A. M. indicate a slight rise, the mean being 98.2°. At 5 P. M., the maximum is reached, the mean being 98.6°. The 11 P. M. notes indicate a slight subsidence.

Dr. Williams calls attention to two main facts which appear to be established by his observations: 1st. The post-meridian character of pyrexia, when pyrexia exists at all. 2d. The remarkable fall at night and the subnormal temperature of the early morning. The pyrexia he attributes to "an excessive action of the natural processes by which the body heat is maintained." The fall in the night, he thinks, is due to "the influence of collapse proceeding from the well-marked weakening of the constitutional powers in phthisis." The following are the deductions which the author draws from a series of observations in reference to the loss of weight in the various stages of phthisis: 1st. That, though the tendency of the disease is towards emaciation, gain of weight is possible in every stage, provided there be no diarrhoea or hæmoptysis, and that food can be taken and assimilated. 2d. That pyrexia is not incompatible with gain of weight, provided the appetite be good. 3d. That, while active third stage cases are the

least likely to gain weight, chronic cavity patients are the most likely to increase in flesh. 4th. That neither tuberculization nor softening precludes gain of weight.

Dr. WILLIAM MARCET's article, entitled *Contributions to the History of Laryngeal Phthisis*, is founded upon 70 cases of the disease which came under his observation at the Brompton Hospital for Consumption. After a brief notice of the literature of the disease, the author proceeds to analyze his cases with the following result: Of the 70 patients, 49 were males, and 21 females. Flint, in his new work on Phthisis,¹ records even a greater proportionate frequency of the disease in men than this; for of 61 cases observed by him, only 4 occurred in women. There is, therefore, fair ground for concluding that men are more liable to the disease than women. Of 55 cases in which the ages were recorded, 26 were of patients between 20 and 30 years of age. This seems to show that age has little or no influence as a predisposing cause of laryngeal phthisis, as a large preponderance of cases of phthisis occurs between these ages. In a given number of cases of consumption, the larynx, Dr. Marcet believes, will be attacked much more frequently among those who seek relief at hospitals, and in them the disease will run a more severe course.

The author could not trace the laryngeal affection to overwork of the vocal organ, and, to his surprise, there was not a single hawker among his patients. He is inclined to attach more importance to deficient exercise, want of pure air, and the neglect of hygiene as causes of laryngeal phthisis. Although Dr. Marcet does not attribute any positively contagious properties to the breath in laryngitis or phthisis, he thinks it not improbable that the tendency to consumption resulting from a sedentary occupation in crowded and ill-ventilated rooms is partly owing to the irritating influence of expired air. He finds that irritation of the larynx is very readily set up in his own person by inhaling the breath of the person whom he is examining with the laryngoscope.

Aphonia may occur during the course of consumption, without there being any inflammation or tubercular growth in the vocal organ. The patient finds out that after speaking for a length of time the voice drops, or it fails; while singing, reading aloud, or teaching has to be discontinued, and the act of phonation becomes an effort. In most of these cases the laryngoscope will show that the tension of the cords is at fault; in a few cases adduction is seen to be incomplete. This condition he attributes to the deficient state of nutrition of the lungs, which weakens the functions of the laryngeal nerves by a reflex action through the inferior ganglion of the pneumogastric. Electricity in these cases is of little service, but on the other hand an improvement in the state of the lungs and in the general health will often be attended with a simultaneous favourable change in that of the voice.

The lesions of laryngeal phthisis, which the author describes, are so well known that it is not necessary to recount them here. The epiglottis was observed to be affected in 31 out of the 70 cases, the change consisting in a hardening and alteration in shape, which caused it to present a shrivelled-up and contracted appearance. The pain felt in the throat in these cases is sometimes excruciating, especially during the act of deglutition. The prognosis is, as a rule, unfavourable. "The ultimate or late form is the last blow given to a constitution shattered by pulmonary disease." This is a very different opinion from that given by Dr. Flint in the work already referred to. The treatment which Dr. Marcet recommends is the introduction into the larynx of a few

¹ Phthisis; its Morbid Anatomy, Etiology, Symptomatic Events, and Complications, etc. Philadelphia: Henry C. Lea, 1875.

drops of the following solution: Iodine, gr. x-xx; iodide of potassium, gr. ij-iiij; olive oil, fʒj. In case of much irritation of the larynx, this solution may be diluted with an equal bulk of olive oil. The same solution may be rubbed into the skin in the front part of the neck; the object being not to produce counter-irritation, but to obtain an absorption of the iodine. When the soft parts of the larynx are much swollen and hardened, scarifying the parts with Mackenzie's laryngeal scarifier sometimes gives relief. The author has discarded the use of solutions of nitrate of silver, perchloride of iron, or of any strongly astringent or irritating fluid. Solutions of bromide of potassium and alum in glycerine are better. He has frequently found benefit to follow the removal of patients from low to high situations.

We shall give, in his own words, the most important of the conclusions which Mr. SAMUEL WEST draws from his *Observations upon the Eliminations of Urea in Certain Diseases*. And first, in regard to the percentage of urea. I. During the fever the percentage is high, and remains fairly constant as long as the fever lasts. II. During the fever it does not follow the slight variations of temperature. III. Changes in diet cause, during the fever, the same oscillations as they cause during convalescence. IV. The first period of convalescence is characterized by a gradual and progressive fall in the percentage, even until it is considerably below the normal. V. The second period is characterized by a gradual and progressive rise in the percentage, until at last a mean varying from 1.5 to 2.0 is established, when it becomes constant. The following are his conclusions as to the total amount of urea: *During the fever*. I. The total amount is much reduced, and is not in large excess (as stated commonly in the books). II. The total amount varies very considerably from day to day, independently of any law which we can determine at present. III. These variations are independent of the diet. IV. And also of the temperature; hence the total urea is not a measure of fever. V. The variations depend upon the total volume of the urine rather than upon the percentage of urea. VI. The variation was considerable in the different cases quoted. *During the convalescence*. VII. The whole amount is often extremely reduced. VIII. It gives an average which is different in the two periods of convalescence, but sometimes that of the first period is higher and sometimes lower than that of the second period. This may be accounted for, perhaps, by the different fevers, from which convalescence is taking place. IX. The same variations, independent in a great measure of the diet and of the percentage, and varying with the total volume of the urine, are to be noticed during convalescence or during fever.

With the statements that urea is the measure of tissue change, and also that its excretion is governed by the same laws in health and in disease, the results of Dr. West's observations seem hardly to agree; for it has been pointed out that the relation between the amount of nitrogen in the food and that estimated in the urine as urea is by no means so close as it is asserted to be in health.

Dr. J. WICKHAM LEGG is the author of a paper *On the Histology of the So-called Nutmeg Liver*, which is based upon microscopic examination of twenty livers which showed a well-marked nutmeg appearance. In the earlier stage of the disease, the chief morbid appearance is to be found in the centre of the acinus, and is caused by the dilatation of the radicles of the hepatic vein. In the section these vessels may be seen distinctly enlarged and still completely filled with red corpuscles. The liver-cells themselves seem to be at first not much changed in character. Their outline is, however, hard to be made out, so that they cannot readily be counted; they show a large nucleus and granular contents. In the later stages the dilatation of the capillaries becomes very great, and in this way grave changes are wrought upon the tissues immediately

around them. The rows of liver-cells between the vessels are so much pressed upon that their shape becomes almost linear. The latest stage of all is that in which the centre of the lobule becomes little more than a network of vascular tissue, between the meshes of which a few highly granular and pigmented liver-cells lie. On looking at specimens in this stage with a low power, the outer part of the acinus is seen to be formed of a ring of almost colourless liver-cells, while the centre is filled with a red tissue, studded with pigmented liver-cells; and this tissue, as seen with a low power, looks very like connective tissue. But on examining the specimen with higher powers, it is found to be made up of channels, the walls of which are exceedingly delicate and transparent, and within which red-blood corpuscles can still be made out. No nuclei are seen in the midst of this tissue as in the interlobular tissue, but studding the field are numerous rounded or slightly polygonal cells, with highly pigmented contents, and containing no discoverable nucleus. These cells Dr. Legg holds to be the remains of liver-cells. The tissue in the centre of the lobule was regarded by Rokitsansky as an overgrowth of connective tissue, but the author is quite unable to agree with this statement. He has also not found fatty infiltration of the cells of the outer border of the lobules quite so frequently as is stated by writers to be the case.

In the earlier stages the capsule of Glisson may be found increased in size and with numerous lymphoid corpuscles present in it. When the latter are present, they are most abundant in the sheath of the vessels; and it is around the interlobular vessels that the increase of the connective tissue is most marked. In the later stages the increase of connective tissue becomes far more marked, and the lymphoid bodies are never absent throughout the whole of the liver. The connective tissue is strewn with them just as in primary cirrhosis. The connective tissue is not always developed to the same degree in every part of the same liver, and in the specimens Dr. Legg examined, was never so much increased as to penetrate within the lobules themselves. He doubts whether the growth of the interlobular tissue ever becomes so great as to give a hobnailed appearance to the liver.

The author thinks it unwise to call this form of liver-disease red atrophy, as has been done by Rindfleisch, since this name was given by Virchow to a rare state of the liver met with after wasting diseases, such as typhoid fever.

We can only notice by title Dr. ALFRED L. GALLABIN'S article *On the Construction and Use of a New Form of Cardiograph*, as the description of the instrument would occupy more space than we feel justified in devoting to the subject.

Dr. ROBERT McDONNELL'S report *On a Case of Double Facial Palsy, with Observations on the Physiology of the Nerves supplying the forepart of the Tongue*, will be found to be interesting. The patient, a healthy man, 24 years old, attributed his paralysis to exposure to wet and cold. With the facial palsy there was loss of the sense of taste in the anterior portion of the tongue, which was of course due to the fact that the *chorda tympani* was involved in the paralysis. There was no loss of general sensibility in the organ, the patient being able to detect the slightest touch, and to distinguish the double points of the æsthesiometer with the tip of his tongue as well as the experimenter or his students. Two egg cups being filled with water slightly differing in temperature, the patient could perceive without hesitation or mistake, a difference not amounting to more than four or five degrees. But he could not detect any difference between solutions of sugar, citric acid, salt and quinia, when these were applied by means of camel's hair brush to the fore part of the protruded tongue, until he was allowed to withdraw his tongue into his mouth. The secretion of saliva

excited by the application of sapid substances to the forepart of the tongue was in abeyance. The functions of all the other cerebral nerves was unimpaired. The author at the close of his paper refers to a case reported by Dr. Althaus, in the 52d volume of these 'Transactions,' in which there was complete loss of function of the whole fifth pair of cerebral nerves unaccompanied by any other affection of cerebral or nervous matter. The two cases may be regarded as completely complementary to each other. J. H. H.

ART. XXVII.—*Transactions of the American Ophthalmological Society.* Eleventh Annual Meeting. 8vo. pp. 359. New York: William Wood & Co., 1876.

THIS volume bears ample evidence of the activity of the American Ophthalmological Society, and worthily supports the reputation established by its predecessors in the series. In accordance with our custom, we shall analyze its contents.

The first paper is by Dr. O. D. POMEROY, of New York, and is a report of *A Case of Nystagmus, associated with Concomitant Convergent Strabismus in Emmetropic Eyes, relieved by correction of the Squint.* The squint had existed since infancy, and there was diminished vision, with ophthalmoscopic signs of old choroiditis. It was almost impossible to obtain even a cursory view of the fundus oculi, so constant and rapid were the oscillatory movements of the eyes.

After tenotomy of the internal rectus, performed twice on one eye and once on the other, the squint was completely corrected and the nystagmus disappeared. The results of the operations remained unimpaired at the end of two years.

A Case of Spontaneous Cure of Sub-retinal Effusion, with an Analysis of Twenty-one Cases of the same Disease, is the title of a paper contributed by Dr. DAVID WEBSTER, of New York. The patient was a lady 57 years of age. She had always been excessively near-sighted, but had never worn glasses, and her eyes had never given her much trouble until the summer of 1874. She had then been confined to bed for a few days with "a rush of blood to the head," and her vision had been somewhat impaired. In about a year it became suddenly worse.

When seen by Dr. W. vision was much diminished in both eyes and confined entirely to the lower portions of the visual fields. Ophthalmoscopic examination showed a detachment of the lower half of the right retina. The vitreous was opaque in the left eye. The patient was kept on her back in bed for ten days, the eyes being constantly under the effect of atropia. At the end of that time, the detached retina had resumed its natural position, and the vision was much improved.

Dr. Wadsworth reported a case in which the separated retina was replaced spontaneously; Dr. Mathewson, one in which recovery took place after repeated application of dry cups to the temple; Dr. Strawbridge, one in which the retina was replaced by rupturing it with needles, and Dr. E. Williams, one in which the same result followed its rupture by accidental injury.

Under the head of *Rare Cases, with Practical Remarks*, Dr. E. WILLIAMS, of Cincinnati, reports the following cases:—

¹ See Amer. Journ. of Med. Sci., vol. lix.

Dislocation of lenses, one from slight cause, a blow from the hand of a child, and several spontaneous.

Basedow's disease.—One of the patients was a delicate, emaciated lady, but was much annoyed by the deformity caused by the disease, and very anxious to have an operation performed for its relief.

Dr. W. did Graefe's operation for narrowing the palpebral commissure by closing the lids for half an inch at the outer canthus of each eye. Destructive inflammation of the eyes set in, followed by sloughing of the cornea, prolonged suppuration, etc., and ending in the death of the patient.

The other patient was a "woman, 40 years of age, large and rosy, and of fine personal appearance." The same operation was done in this case, and with the same object. Dangerous inflammation of the eyes followed, but was subdued by removal of the stitches and careful treatment.

Dr. W. believes "that the pressure of the narrowed commissures in both these cases caused strangulation and the consequent inflammation."

Anæsthesia retinæ.—Of three patients whose cases are recorded under this head, two were women, and one "a delicate, nervous boy," ten years of age. They had high degrees of amblyopia (hysterical?) without any change in ophthalmoscopic appearances. Two recovered under the use of hypodermic injections of strychnia. The third, at the time of report, remained unimproved.

Binocular temporal hemiopia.—The patient was a robust, healthy looking man, 44 years of age. "Six years ago he had several epileptic attacks, but has been free from them for four years. He has not complained of much headache, but of severe pains in the back of the neck, coming in paroxysms. Has nausea frequently, but no vomiting; memory impaired at times."

"There was a total loss of perception in the outer half of each field of vision." No marked changes in the fundus of either eye. "In this instance the lesion must have existed at the anterior part of the optic chiasm." The patient lived at a distance, and was lost sight of.

Strabismus with rigidity of the muscle.—Four cases of this kind were operated on, successfully so far as the cosmetic effect was concerned, but there was little or no mobility of the balls.

Ophthalmic Contributions, by Dr. GEO. STRAWBRIDGE, of Phila., consist of the following reports of cases: *Hysterical blepharospasm, treated and relieved by forcible elevation of the eyelid*.—The patient was an hysterical young lady, 22 years of age. Inability to raise the eyelids came on suddenly during the night. She was treated, on the plan proposed by Dr. Mathewson, by means of a rubber band fastened to the skin of the eyelid and to the forehead. A simple strip of adhesive plaster was afterwards substituted for the rubber band. After several weeks of treatment, the condition was entirely relieved.

Foreign bodies in the eyeball.—In the first case, a small iron splinter remained in the sclerotic coat for two years without causing any great degree of reaction. In the second case an iron splinter passed through cornea, iris, and lens, and lodged in the sclerotic near the papilla. The disorganized ball was removed ten years afterwards on account of sympathetic irritation of the uninjured eye. In the third, an iron splinter was encysted for twenty-one years, without the least injurious effect. In the fourth, an iron splinter lodged in the iris was removed by iridectomy.

Connective tissue growth in the vitreous humour.—A white-shreddy formation could be seen, by the ophthalmoscope, commencing at the optic disk and projecting forward into the vitreous humour. An accompanying plate illustrates the appearance of the growth.

Dr. G. T. STEVENS, of Albany, contributes a paper on *Successful Extraction of a Foreign Body from the Retina by the aid of the Ophthalmoscope*. The foreign body, which was a small piece of steel, had entered through the outer border of the cornea, and could be seen, by the ophthalmoscope, imbedded in the retina behind the equator of the ball. During ophthalmoscopic examination, a delicate needle was passed through the sclerotic at the position of the foreign body. Using this as a guide, an incision was made, in which the steel presented, and was seized by a fine pair of forceps. The appearance of the eye was perfectly preserved, though there was no useful vision.

On the Increase of Refractive Power of a Plano-cylindrical Lens when rotated about its Axis. By Dr. G. HAY, of Boston.—Dr. Hay shows by formulæ and diagrams, without which his demonstration cannot be followed, the effect of rotating a plano-cylindrical lens about its axis. "We can thus by more or less obliquity get the effect of a cylindrical lens of continuously varying power." He gives a table of successive concave cylinders, progressing from $-\frac{1}{2}$ to $-\frac{1}{8}$, which can be neutralized by rotating a $+\frac{1}{8}$ cylinder.

Some Peculiar Phenomena attending a Case of sudden temporary Loss of Hearing and Sight.—Dr. H. W. WILLIAMS, of Boston, reports the case of a little girl, eight years of age, who suddenly became totally deaf and, four weeks afterwards, completely blind. As there was no history of cerebral symptoms, and no abnormal change in the organs of sight or hearing could be discovered, it was suspected that the cause of the symptoms was probably reflex irritation arising from the presence of worms in the intestines. The expulsion of a large amount of tapeworm was followed by recovery of hearing and sight.

Two Cases of Vascular Disease of the Orbit.—The two cases which form the subject of this paper, by Dr. G. C. HARLAN, of Philadelphia, were reported in the number of this Journal for July, 1870.

In that of L. L., who is the subject of congenital aneurism by anastomosis of the left orbit, with enormous hypertrophy of the whole side of the face, there has not been any very material change since the last report except that the aneurismal bruit, which was very loud, has almost ceased.¹

The second case, that of S. G., was one of pulsating exophthalmos following a severe injury of the head, with probable fracture of the base of the skull.

Treatment by continuous and afterwards by intermittent compression of the carotid had been thoroughly carried out without any decided result. The patient, however, still kept up intermittent compression at frequent intervals each day, and at the end of six months noticed decided improvement. Two years later he reported that the prominence of both eyes had entirely disappeared. There was still some sound, and he continued to practise occasional compression for several months longer (more than three years after the commencement of treatment), when all symptoms disappeared.

Some remarks follow on the difficulties and doubts of diagnosis in cases of so-called "orbital aneurisms," and a summary is given of all the cases in which post-mortem examinations have been recorded, fifteen in number, with the following analysis: Aneurism of both ophthalmic arteries, 1 case; venous clot from phlebitis, 4 cases; venous dilatation from phlebitis, 2 cases; malignant growths, 3 cases; post-orbital aneurism, 3 cases; post-orbital varix, 2 cases.

"Competent observers had committed themselves to the diagnosis of orbital aneurism in nearly all these cases, and in the remainder the same conclusion could hardly have been resisted by any surgeon whose attention had not been particularly called to the subject."

¹ This case has, since it was reported to the Society, undergone spontaneous cure by complete consolidation of the aneurismal tumour.

Case of Sector-like Defect of Field of Vision.—The patient, whose case is described in this paper by Dr. Wm. Thomson, of Philadelphia, is a man 50 years of age; at present in good health, but who four years ago had a sudden attack of vertigo, was insensible for a few moments, and noticed a numbness in his hands for several days. His sight was disturbed at that time, and has remained in the same state since. There is a partial loss of the field of vision in the upper and left quadrant of each eye. The point of special interest is that the macula is not involved in an area of blindness which affects the retina above and below it exactly to the median line, that is to a vertical line drawn through the point of fixation.

The same phenomenon was observed in a case of complete binocular hemiopia reported by Dr. Thomson in the *Proceedings of the Society for 1871*. It would seem, from these cases, "that at the region of the fovea the elements from each side of the brain might be intermingled, and that thus the full vision might be accounted for in cases where severe lesions were known to have occurred in one hemisphere."

The next communication is an *Obituary Notice* of Dr. Ed. Delafield, of New York, by Drs. Dix and Williams, of Boston. Dr. Delafield was the first president of the American Ophthalmological Society, and one of the founders of the New York Eye and Ear Infirmary.

On the Effect of a Cylindrical Lens with Vertical Axis, placed before one Eye. By O. F. WADSWORTH, M.D., of Boston.—The patient was an artist, with an astigmatism of the left eye, which was corrected by a $\frac{1}{4}$ cylinder. He complained that he saw "perspectively," that is, parallel horizontal lines appeared as if they converged towards a vanishing point to the left side. Dr. W. explains this phenomenon by reference to the stereoscopic combination of the shortened image upon one retina, with the normal image on the other. As this explanation cannot be abridged intelligibly, readers who are interested in physiological optics must be referred to the article itself, with its accompanying diagrams.

A Case of General Sarcoma of the Choroid, probably congenital. By Dr. R. J. McKAY and Dr. H. C. ENO, of New York.—The day after the patient's birth it was noticed that the right eye and right side of the face were swollen. The eye was enucleated for the relief of sympathetic ophthalmia of the other eye, when the child was a little more than a year old. Four months afterwards there had been no return of photophobia, and the child's general condition was good, though there is probably a malignant growth in the cavity of the antrum. Dr. Eno, who made a microscopic examination of the eye, states that the "case is one of general choroidal sarcoma, without the formation of a distinct tumour. Inasmuch as the eyeball was enlarged and protruded at the time of birth, and there existed a congenital tumour of the antrum, it is not improbable that the new growth in the choroid also commenced during intra-uterine life."

A Case of Consecutive Enucleation of both Eyes for recurring Glioma. By Drs. C. R. AGNEW and H. C. ENO.—One eye was removed from a child thirteen months of age. He had been observed not to fix this eye accurately in early infancy, and his mother had noticed a yellowish reflex from behind the pupil when he was seven months old. Six months afterwards, the other eye became affected and was also enucleated. Eighteen months after the first operation, the child appeared perfectly well. A microscopic examination of both eyes was made by Dr. Eno. In one, half of the vitreous chamber, and in the other, nearly the whole of it was occupied by a mass of glioma.

Dr. J. GREEN, of St. Louis, reports favourably of his experience in *Iridotomy by Wecker's Method*.

Notes on the Examination of the Eyes of a Criminal executed by hanging. By Dr. GREEN.—No trace of any lesion, either of the capsule or lens, could be discovered in either eye, and the optic disks and retinae were found to be normal.

Castor Oil as a Menstruum for dissolving Atropia for Application to the Eye.—Dr. GREEN recommends the substitution of the alkaloid for the salt, the latter not being readily soluble in oil.

"Double glasses" are recommended by Dr. H. D. NOYES, of New York, to diminish the amount of spherical aberration when a very short focus is required. He has been able to accomplish this by putting together two plano-convex lenses, with their convex sides towards each other.

Remarks of Dr. H. D. Noyes in connection with Dr. Webster's paper "On separation of the retina."—Among 43 cases of sub-retinal effusion, he had met with only one in which the fluid was spontaneously absorbed.

Eight cases of spontaneous cure will be reported by Dr. Althof in the next number of the Transactions. G. C. H.

ART. XXVIII.—*Transactions of the American Neurological Association for 1875.* Edited by F. P. KINNICUTT, M.D., and T. A. McBRIDE, M.D. Vol. I. 8vo. pp. 257. New York, 1875.

IN December, 1874, a letter, signed by Messrs. Wm. A. Hammond, Roberts Bartholow, Meredith Clymer, J. S. Jewell, E. C. Seguin, James J. Putnam, and T. M. B. Cross, was sent to certain medical gentlemen in different parts of the country, inviting them to participate in a meeting to be held June 2, 1875, in the city of New York, to institute a society for the cultivation of neurological science. In response to this call, thirty-five gentlemen met, as stated, and organized "The American Neurological Association"; tendering the compliment of the first presidency of the society to Dr. S. Weir Mitchell of Philadelphia; but, this gentleman declining, Dr. Jewell of Chicago was unanimously chosen to fill the office.

The proceedings of this meeting, the rules for its government adopted by the Association, and the papers approved by the Committee of Publication, constitute the extremely creditable volume now before us.

The initiatory article, by Dr. JAS. J. PUTNAM, is devoted to the consideration of a *Case of Circumscribed Analgesia*, or, more definitely, one of incomplete sensor paralysis of well-defined limits, affecting the left upper extremity and corresponding side of the neck. A young man of 18 had noticed, after an attack of typhoid fever, that slight wounds of the left hand healed slowly and gave no pain. When he came under observation thirty months later, it was found that a region on the left side of the body, corresponding to the distribution of the entire cervical and brachial plexus, most of the intercostal nerves, and a small part of the 5th cranial, was the seat of a peculiar insensibility. The contact of small objects, such as a feather, or drops of water, was distinctly, though less than normally, appreciated; while the sense of pain from strong electrical currents, pricking, or pinching, was almost entirely abolished. The hand could be kept in water at 120° F. for two minutes before the sensation of warmth was experienced, but at more elevated temperatures painful sensations were produced in a few seconds. With the æsthesiometer the tactile sense was found to be but slightly defective; there was no loss whatever of power in the muscular apparatus, and the nutrition of the part was not impaired. The

affected area was sharply defined on the face and neck, but its limits were not constant; since coming under observation this portion had regained to quite an extent its normal condition. The case was looked upon as the immediate consequence of the typhoid fever, and probably purely peripheral in its nature; so regarded chiefly on account of its definite location. In the discussion of this paper Dr. Seguin expressed the opinion that the real cause of the condition noticed in the case resided in some encephalic trouble.

Dr. S. G. WEBBER of Boston, under the title of *A Contribution to the Study of Myelitis*, gives the history, with the post-mortem examination, of two cases of spinal disease; the article being illustrated by plates showing the microscopic appearance of sections of the cord and paralyzed muscles. The paper supports the view that, in a certain class of cases of spinal paralysis, other portions of the cord than the kinesodic tract are either primarily or secondarily affected; or, in other words, that the degeneration of the ganglion cells in the anterior cornua is not the only lesion existing in the spinal paralysis of adults; the writer inclining to the view that in the pathological process the first stage is one of congestion.

In speaking of these cases, after the reading of the paper, Dr. Seguin expressed the opinion that one of them was an instance of localized myelitis involving every part of the cord, and that the other was an exceptional case of spinal paralysis. In reply to a question regarding the differential diagnosis of congestion of the cord and incipient inflammation, Dr. Webber said that he knew of no means that would enable him to decide whether mere congestion or organic change was present at any given time. Dr. Clymer quoted a case of acute spinal paralysis in an adult treated with the best results. Wet cups to the spine, repeated, followed by free blistering and the galvanic current, prevented atrophy and loss of function of the muscles, and the patient now can walk without much imperfection in his gait. He was of the opinion that this case was one of congestion of the spinal cord, accompanied by some destruction of the cells in the anterior cornua, and believed that it would have gone on to the production of more serious changes, had not the treatment been promptly antiphlogistic.

The Structure of the Nervous Tissues and their Mode of Action is the subject of the most extended article in the series, contributed by Dr. H. D. SCHMIDT of New Orleans. About two-thirds of the paper are devoted to an interesting summary of existing and accepted views of the structure of the normal nervous tissues, the second portion considering the function of the individual anatomical elements. A large part of the first division is the result of original microscopic observation, and has been previously published elsewhere by Dr. Schmidt; but, as the sketch of the development of nerve-tissue in the fœtus is presented for the first time, it may not be uninteresting to reproduce part of it here:—

“Three principal anatomical elements take part in the formation of the primitive nervous tissue in the human embryo, namely, 1, a gelatinous, homogeneous liquid; 2, a great number of small granules of about $\frac{1}{1200}$ to $\frac{1}{200}$ mm. in diameter, which most probably originate directly in the former; and, 3, a considerable number of small round or oval nuclei. Besides these elements, there are also observed a number of certain embryonic cells, filled with small nuclei, which are concerned in the process of multiplication of the latter. These few elements not only serve to the development of the nervous tissues, but also to that of their bloodvessels.

“In the smallest human embryos which I examined in the course of these special studies, measuring about 9 mm. in length, the substance of the brain consisted only of the above elements. With the exception of some short

granular fibrillæ adhering to some of the nuclei, no other trace of the formation of nervous fibrillæ could be discovered. In somewhat older embryos, measuring about 16 mm. in length, we distinctly observe the first traces of the development of nervous fibrillæ, as well as of ganglionic bodies. The spinal marrow consists here still of an immense number of granules held together by a viscid material, the above-mentioned gelatinous, homogeneous liquid. The mutual adhesion of the granules, however, is still very slight; for on examining a small portion under the microscope it is lost, and the granules appear as if diffused through the latter. But on small portions adhering to the *pia mater*, it is observed that the granules have already begun to arrange themselves in rows. There are also a great number of nuclei distributed throughout the granular mass. In the substance of the brain we observe the first traces of the formation of ganglionic bodies in the form of small conical filamentary processes, composed of granules adhering to a number of nuclei. Otherwise, no granular fibrillæ are observed.

"In consequence of the muscular fibres of this period consisting also still of granular fibrillæ, it is very difficult to separate the peripheral nerves running between the muscles for microscopic examination; but on a bundle of nervous fibrillæ overlying a fragment of spinal marrow, and representing a root of the spinal nerves, I observed the granules already arranged in rows.

"In the embryo of about eight weeks old, the peripheral nerves are sufficiently developed to be dissected out. At this period the whole nerve consists, like that of the insect, only of a bundle of parallel granular fibrillæ, surrounded by a sheath. Besides a considerable number of small nuclei, their interspaces are filled up by very numerous free granules, which, arranging themselves also into rows, serve to the formation of new fibrillæ. In the spinal marrow, the granules are now decidedly arranged in rows, but as yet not so firmly fused into the form of a fibril as in the peripheral nerves. In the brain the arrangement of the granules into rows is not yet observed, though it may exist. I suppose the adhesion between the granules to be so feeble as to be easily disturbed by manipulation. The formation of the ganglionic bodies also seems to have not much further advanced than in the smaller embryos cited above. In the sympathetic ganglia of the ganglionic cords, however, which can be distinctly seen extending on each side of the vertebral column, we find the ganglionic bodies considerably further developed than in the cerebro-spinal axis. They are formed by a collection of granules around the larger nuclei, from which the processes finally issue to form a connection with the granular fibrillæ representing the sympathetic nerve-fibres. The sympathetic nerves of this period consist, like the peripheral, only of a bundle of loose fibrillæ, surrounded by a delicate sheath, which is derived from that enveloping the entire ganglion. The ganglionic bodies of the spinal ganglia are still further advanced in development, for here the continuation of their processes into the nerve fibres can distinctly be seen.

"From the above-stated facts, we see, then, that the nervous system is by no means developed from the centre, as has been supposed; that is, the peripheral nerves do not arise from the great centres, and slowly extend into the other tissues. On the contrary, the nerve tissues, appearing at one and the same time throughout the animal organism, arrive at their full development sooner at the periphery than at the centre."

Want of space forbids pursuing this subject further into the development of the individual elements; we therefore turn to other portions of the article. Dr. Schmidt states that he has found that the multipolar ganglionic cell in the vesicular neurine, consists of a plexus of granular nervous fibrillæ, surrounded by a fine limiting membrane, which does not, however, manifest itself by a double contour. He considers that it is not entitled to the designation of a true, organic cell; and proposes, as a more correct term, the name ganglionic body, and thinks that its so-called nucleus possesses all the characters of a most perfect organic cell.

In the second part the mode of action of the nervous tissues is taken up.

The hypothesis of Herbert Spencer is quoted as the most plausible explanation of the phenomena, namely, that the transmission and recuperation of nerve force is due to molecular motion transmitted by means of *isomeric transformation* of the nerve cell, in which the force is augmented by the decomposition of some *unstable matter*; the nerve current being composed of innumerable waves of nervous energy caused by these molecules rapidly falling from one isomeric state to the other. But with the advance of knowledge of the microscopic anatomy of nervous tissue, this requires some modification. The following explanation is certainly ingenious:—

"In regarding the axis cylinder as composed of homogeneous substance, no difficulty arises in understanding the isomeric transformation of its molecules, they all being of the same nature. But remembering that the axis cylinder represents a bundle of fibrille, each originally consisting of a row of granules, which, in the course of development, were held and fused together by an intermediate substance, the question arises, Is the latter identical in composition with the granules, or does it differ from it? The answer will be, that in the case where the molecular constitution of the granules is the same as that of the intermediate substance, the isomeric transformation must be equally the same throughout the entire length of the fibrille; while, in the other case, where the composition of the organic molecules of the one substance would differ from that of the molecules of the other, the process of transmission might rather resemble that going on in a *voltare pile*, and consequently we might presume that a greater amount of nerve force would be generated. The observations of Fromann, if correct, rather indicate a difference in the organic composition of the two substances. This condition would somewhat account for the slowness of the nerve current."

"The more the molecules of a nerve-fibrilla are subjected to isomeric transformation, the more readily they will adapt themselves to the passage of the nervous current. Thus, the so-called *automatic* actions of the voluntary muscles, as observed in the performance of many of the acts, may be explained. In the act of writing, for instance, the muscles concerned in the guiding of the pen are at first directed by the will, as seen in the uncertain movements of the hand of the pupil in drawing a letter. But in the course of time, when the nervous tracts, along which the stimulus arising in the cortical substance of the brain is conveyed to the muscles concerned, have been travelled so often, their composing molecules, it seems, have become more accustomed to the shifting of their position during the isomeric transformation. In consequence, the passage of the nervous current becomes easier, and the stimulus coming from the brain needs only to be renewed from time to time; the hand will mechanically perform the motions required; for the impulse starting the muscles to action, arising in the nerve-centres of the spinal marrow, has now a shorter route to travel. Many such examples of automatic action might be cited, such as the rapid movement of the fingers in the playing of musical instruments, and the acts of walking, and avoiding obstacles in the road, when the mind is intensely occupied by some interesting train of thought."

The following are the conclusions to which Dr. Schmidt has come regarding the mode of action of the nervous tissues:—

"1. The nervous stimulus, arising at the peripheral termination of a nerve-fibrilla at a sentient surface, may be (?) directly, without being re-enforced by passing through some unstable organic matter, transmitted to the organ to be stimulated. 2. The ganglionic bodies seem to be stations, where a considerable number of nerve-fibrille, without forming any direct communication, meet around a central point—the *nucleus*—and then take their course to their final destination, either directly in the form of axis cylinders, or after having first taken part in the formation of a system of anastomoses. The function of the nucleus is of a problematical nature; it may consist in re-enforcing the nervous stimulus, or be confined to the limits of that of all other nuclei. 3. The granular substance of the nerve centres, consisting of groups of granules, I

regard as that substance by which nervous stimuli are received, and in which the nervous impulses originate to be transmitted to the various organs of the body. In the spinal marrow, the impressions made by the stimulus on the granular substance are *evanescent*; in the cortical substance of the brain, representing the seat of the mind, they are more or less *permanent*."

That the brain secretes thought as the liver secretes bile is the favourite dictum of the school to which Dr. Schmidt belongs, is evident from the summary manner in which he dismisses the views of those who are not quite educated up to the point of acknowledging the essential identity of mind and matter.

Referring to mind, viewed as anything other than a manifestation of molecular change in matter, he says: "Of course, the agent, how much soever *ethereal* it may be, must nevertheless be *ponderable*; for if it was *imponderable*, it would be equivalent to a *nothing*, and a *nothing* cannot act upon a *something*;" the italics being the author's.

Force has been defined as anything which causes change in matter; but if the preceding proposition is true, then there is no such thing as force, because nothing exists in the universe but ponderable agents, which alone are capable of impressing our material senses. To attempt to simplify the subject by describing force as an attribute of matter, will not explain the phenomena better than before, nor alter the fundamental fact that matter is incapable of spontaneous change.

We conclude our already extended consideration of this interesting article with the following summary:—

"The conclusions then to which we ultimately must come by a careful study of the minute anatomy of the *nervous system* in general, and that of the *cortical layer* of the brain, the organ of the mind, in particular, are as follows: 1. All knowledge has originally been derived from the external world through the instrumentality of the special senses. 2. It is transmitted from the parent to the offspring by inheritance, manifesting itself then by instinctive actions, as especially observed in animals; or it is acquired through the special senses from the external world by the individual itself, and *subsequently* increased by education and training. 3. All additional faculties or qualities of the mind, gradually acquired, must be *accompanied by anatomical changes*—however small they may be—in its organ or mechanism, the brain. 4. It is by virtue of the anatomical changes that peculiar qualities and characters of the mind are transmitted by inheritance, from the parent to the offspring, from generation to generation."

In the next article, *On Pigmentary Deposits in the Brain resulting from Malarial Poisoning*, by Dr. WM. A. HAMMOND, nothing of importance has been added to the admirable article of Dr. J. Forsyth Meigs in the *Penn. Hosp. Reports* for 1868, which, by the way, we do not find mentioned in this paper. The method of obtaining specimens of blood from malarial cases, recommended by Dr. Meigs, is, to say the least of it, better adapted to general practice than the plan, proposed by Dr. Hammond, of withdrawing blood from the interior of the spleen for microscopic examination, by plunging a hypodermic syringe directly into the interior of that organ. Perhaps, if the relative position of physician and patient were changed, Dr. Hammond might be led to entertain the same opinion.

A number of smaller articles, which want of space forbids mentioning in detail, are included in the volume; the most practical being one by Dr. N. B. EMERSON on *Phosphorus in the Treatment of Neuralgia and other Neuroses*, in which the administration of free phosphorus is warmly recommended; given either in Thompson's solution, with alcohol, glycerine, and peppermint, or,

preferably, in some cases, dissolved in cod-liver oil, in which form the writer has used it with good satisfaction.

We have no reason for doubting that the subsequent volumes of the reports of the Transactions of the American Neurological Association will maintain the standard attained by the first, and, therefore, welcome the series in advance as a substantial gain not only to the branch of medicine especially devoted to the study of normal and morbid nervous phenomena, but also to the general literature of medical science.

F. W.

ART. XXIX.—*Transactions of American State Medical Societies.*

1. *Transactions of the Medical Society of the State of Pennsylvania*, June, 1875. 8vo. pp. 385. Philadelphia, 1875.
2. *Transactions of the Medical Society of New Jersey*, May, 1875. 8vo. pp. 250. Newark, N. J., 1875.
3. *Transactions of the Kentucky State Medical Society*, April, 1875. 8vo. pp. 48.
4. *Proceedings of the Medical Association of the State of Arkansas*, Nov. 1875. 8vo. pp. 76.
5. *Transactions of the Kansas Medical Society*, May, 1875. 8vo. pp. 82.
6. *Transactions of the Medical Society of the District of Columbia*, 1875. 8vo. pp. 94.
7. *Transactions of the Texas State Medical Association*, April, 1875. 8vo. pp. 223. Columbus, Texas.
8. *Transactions of the Colorado Territorial Medical Society*, June, 1874, and June, 1875. 8vo. pp. 77. Denver, Col., 1875.

1. DR. WM. PEPPER, in his Address in Medicine before the *Medical Society of the State of Pennsylvania*, enumerates the most important ideas and advances of the last ten years. Newly observed forms of disease, and new or improved means of observation and of treatment, are treated with rare discrimination and good judgment.

Dr. Curwen, of the State Hospital for the Insane at Harrisburg, contributes a judicious report upon mental disorders, dealing with the conditions of our social life as tending to impair health of mind, and with the means adapted to prevent mental disease.

The larger portion of the volume is made up of reports from the various county medical societies. In one of these is reported by Dr. E. P. Allen a case in which phlebitis was twice produced by the hypodermic injection of ergot, for fibrous tumour of the uterus.

The cure of aneurism of the left external iliac, by Faradization, is reported by Dr. Duncan.

An interesting case of diaphragmatic hernia, fatal many months after its origin, is reported from Lycoming County.

Dr. R. Davis advocates partial detachment and turning to one side of the placenta when attached over the os. Where dilatation of the os has made some progress, this treatment arrests hemorrhage without the necessity of version, and allows the labour to progress naturally.

The safety with which pneumatic aspiration may be employed is illustrated in a case described by Dr. Guthrie. Here the bladder was eighteen times emptied, without the slightest bad symptom.

Dr. Hiram Corson commends, as possessing extraordinary power over the assemblage of symptoms known as dyspepsia, a combination of aloes and bicarbonate of soda known as Dr. Mettauer's aperient solution.

Many of the county reports here presented contain records of instructive cases, which, however, do not call for special comment. In the earlier portion of the volume, also, are two or three addresses and papers, which were undoubtedly listened to with pleasure and profit, but of which it is unnecessary or impracticable to make more than brief mention. Such are President W. L. Atlee's address upon "Old Physic and Young Physic;" Dr. Benj. Lee upon "Hygiene;" Dr. Keyser upon "Cataract Extraction;" Dr. Turnbull upon some affections of the "Eustachian Tube;" and Dr. Allis upon the "Administration of Ether."

2. We are glad to see from the minutes of this session of the *Medical Society of New Jersey* that the attention of members was directed to the peculiar advantages as a sanitarium, possessed by the region of the State known as "The Pines."

In an essay on the "Causes of Insanity" by Dr. J. W. Ward, we find sensible and discriminating views upon this often misconceived subject. It has been somewhat discouraging to find even medical men imbued with the narrow and erroneous notions current among the laity. The absurdly false or exaggerated importance attributed by the vulgar to those outward circumstances or conditions which attend or precede the overt manifestations of insanity, is here well exposed. What people commonly assign as causes of disease, are most often either its results, or of purely secondary productive potency, or wholly unconnected with the attack.

A very instructive instance of the importance of pure drinking water for cows, to insure wholesome milk, is related, in a report from a standing committee. Three infants were well and thriving, upon the milk of one cow. The animal unfortunately broke bounds, and drank of stagnant water from old clay-pits. After using her milk at morning and noon the next day, the children were attacked with cholera infantum, from which two died before sunset, and the third and eldest after four days. The pasture was the same as before, the cow's health not apparently affected, and no cause could be discovered for the children's illness other than that above assigned.

The birth of an infant weighing 15 pounds is reported by Dr. Welch. A predecessor of this heavy weight had scaled 14 pounds.

Delirium tremens, in a subject consuming five grains of morphia daily, was treated by the same physician with tinct. digitalis in increasing doses of from one to four drachms, every three or two hours. Profound slumber was produced, without opiates, after sixty hours' vigilance, and after some twenty-eight additional hours of medication.

A severe case of constitutional syphilis in a lady of advanced years is stated to have resulted from the kisses of a graceless nephew. The results as described are certainly far from encouraging to maiden aunts of kindly and indulgent impulses.

Dr. Townsend describes a case of a woman dying after delivery, from terribly severe neuralgic pains, nausea, and exhaustion, in whom was found, instead of peritoneal inflammation, a liver weighing seven pounds, and a spleen softened and broken down, weighing twenty-four ounces. The gall-bladder contained many small calculi. Neuralgic suffering, with nausea and biliary derangement, had been frequent for years; and almost constant during the last pregnancy.

During her attacks of biliary disorder "irritative eruption" had always appeared over the region of the stomach and spleen.

A very suggestive paper, upon the use of the microscope in gynæcology, is contributed by Dr. A. M. Edwards of Newark. From the large number of forms of fungoid life observed in uterine and vaginal discharges, the writer was led to surmise that a more exact knowledge and observation of these might have important bearings upon treatment. His present aim is more to direct attention to the subject, than to demand any especial credit for his own investigations. The matter is certainly worthy of further inquiry.

Dr. C. W. Larison briefly reports several cases of acute affection of the medulla oblongata. Degenerative softening of the part was found in the fatal cases. Pregnant women attacked with the disease speedily aborted. Of some forty cases said to have been observed, about one-half were females with child. All the patients were adults. Debility, embarrassment of respiration, cough, sweating, vertigo, and mental disorder, were prominent symptoms. . . .

As a *supplement* to the current number of its *Transactions*, the New Jersey Society has published a condensed arrangement of its earliest archives and minutes, covering the period from 1766 to 1800.

One of the first acts of the infant Society was the establishment of a full fee-table. Regular daily visits are ordered to be charged for at the rate of ten shillings *per week*, exclusive of medicines. Phlebotomy, and tooth-pulling, were each one shilling six pence. The larger surgical operations were fixed at three pounds, with from five shillings downward for subsequent dressings. Only one operation is fixed at a higher figure—cutting for the stone, five pounds. Fractures and dislocations seem to have been wholly cared for at rates not exceeding two pounds. Medicines were to be charged at what seem to us high prices. Pills and powders, *per dose*, one to three shillings; and tinctures, *per ounce*, three shillings; while "salivation, including medicines," could not be enjoyed for less than three pounds.

Votes were early passed requiring "apprentices" to engage for not less than four years, to have a competent knowledge of Latin, and to pay one hundred pounds for board and tuition.

In May, 1769, a violent storm, which swelled the brooks and rivers, prevented the regular meeting.

The war of the Revolution caused the meetings of the Society to be suspended for several years.

Several essays prepared for the Society are here printed. In point of literary merit they lose nothing by comparison with more modern efforts of the same sort. Otherwise they are genuine medical curiosities. One, upon the "Chemical Principles of Bodies," and another, treating of atmospheric air, read more like the fanciful lucubrations of the old alchemists than like the teachings of modern science.

3. These *Transactions of the Kentucky State Medical Society* contain little or nothing requiring our comment. Besides the record of proceedings at the annual meeting, we find a presidential address upon matters concerning the interests of the profession; a brief article setting forth the claims, character, and usefulness of the U. S. Marine Hospitals; and a few cases of ovariectomy with memoranda of the history of that operation in Kentucky. We may take this occasion to say that we do not believe that the bulk of its yearly volume is any very trustworthy test of the usefulness of a State medical society. A great work may be done, in uniting, elevating, and instructing the profession, without any pretence to the communication of brilliant discoveries, or original

ideas. The establishment and maintainance of a high moral and scientific tone, and the discouragement of quackery, are more legitimate objects than the accumulation of orations and addresses. These are good and proper, but not essential.

4. We are sorry to learn, from the *Transactions of the Arkansas Medical Association*, that the dissensions which have for some time past divided the profession and interfered with the usefulness of their annual assemblies, are still unassuaged. Reports and addresses which otherwise would have been prepared, have been prevented by the prevailing disorganization.

The use of digitalis in large doses as a cardiac tonic, especially in continued fever, is warmly advocated by Dr. E. T. Basley.

The oxytocic powers of ergot are discussed by Drs. Dibrell and Southall; the former doubting and the latter maintaining the old ideas as to the production of expulsive contractions.

Dr. E. Cross reports a case of suppuration of the spleen, proceeding to spontaneous opening, externally. The patient was a man aged 27 years, subject to severe attacks of intermittent from childhood. The amount of thin, offensive pus discharged at first, was about two quarts. For three weeks a large quantity of matter escaped daily, mingled with pieces of disorganized spleen. Emaciation increased, until, in addition to cod-liver oil and stimulants, injections of equal parts of tincture of iodine and water, with a few drops of carbolic acid, were employed. Improvement at once began, and after some three months, with some changes of the injection, the discharge ceased, and the wound closed. Perfect recovery of health and weight was reported.

5. Dr. G. L. Lewis communicates to the *Kansas Medical Society* some extremely interesting observations upon the "Effects of Compressed Air upon the Human System." His remarks are founded upon experience in connection with works now in progress for the building of piers for a bridge across the Missouri at Atchison. In the caissons, or mammoth diving-bells, at the bottom of the river, workmen are subjected to a pressure of two or three atmospheres, or thirty to forty-five pounds to the square inch. The worst effects are felt shortly after returning to the open air. Constipation and general digestive derangement, with paroxysmal seizures of the most frightful neuralgic pains, are almost invariably produced. Partial paralysis is not infrequent. Parts incapable of motion and deprived of common sensation, will yet be the seat of atrocious pain. Headache and vertigo, and congestion of the lungs, frequently occur. Recovery seems to follow a short removal from the causes of distress. Morphia and ergot are believed to hasten cure or to relieve pain.

In a paper upon "The Use and Abuse of Alcoholic Liquors," Dr. W. L. Schenck supports with considerable ability the idea that alcohol is neither a food nor a stimulant, but a true anæsthetic.

A fatal case of encephaloid disease, in a girl of fifteen, consisting of a primary tumour of the face, weighing five pounds, with extensive secondary deposits, is reported by Dr. Mottram.

Several minor papers call for no special notice.

6. The *Medical Society of the District of Columbia* issues its proceedings in quarterly numbers. Those before us are the four going to make up volume second. They are composed of reports of cases and discussions, to the utter exclusion of set orations and essays.

A case of *mesenteric hernia*, or strangulation of the small intestine by a loop becoming engaged in an opening in the mesentery, was reported by Dr. J. T. Johnson. The discussion which followed naturally passed into one upon laparotomy. Dr. Hagner reported a case of *tumour of the larynx*. Asthmatic symptoms of long duration, with more recent paroxysms of suffocative dyspnoea, were wholly removed by the removal of the growth. This was effected by repeated cauterization. Previously, only the chloral hydrate controlled the alarming spasms of the larynx.

An interesting case of inordinate consumption of *alcohol and morphia* gave rise to an interesting discussion.

The vexed question of the best treatment for *carbuncle* was opened by Dr. Triplett, who urged a complete removal of the diseased mass by amputation. His views were not shared by the other speakers.

The treatment of women after labour, and the propriety of trephining in cranial fractures, formed the topic of two interesting debates.

Pathological specimens of injuries to the intestines were shown by Dr. Hartigan. In three cases rupture had occurred from a kick, with little or no external sign of violence.

A specimen of aortic aneurism containing a fibrous clot gave rise to much discussion. Rest, or iodide of potash, were credited with the curative movement. Some, however, denied that a cure had occurred.

Two cases of monstrous births gave rise to considerable debate.

7. We are glad to see, from the publishing committee of the *Texas Medical Association*, an earnest appeal to contributors to send in their articles in a decent literary form. Allowing all excuses, there is, they most justly state, "a limit beyond which indulgence to delinquencies of this class ought not to extend."

Dr. D. R. Wallace, in a report upon medical progress, takes occasion to argue with considerable force in favour of the "change of type" theory. He refers, too, with pride, to the grand achievements of preventive medicine in modern times.

Dr. H. R. Harrison takes the ground that the much discussed epidemic of 1873, in certain parts of Texas, was not yellow fever at all, but a remittent fever of distinctly malarial origin.

Dr. T. J. Heard contributes what would seem to be an unusually valuable paper on "Malarial Hæmaturia." By a most vexatious accident at the bookbindery, the sheet containing its sixteen central pages is omitted from our copy. He seems to have gathered medical opinion by circular letters of inquiry. His own remarks and inferences appear to be extremely just. Dietetic reform, in improved cookery, the free use of vegetables, the cultivation of the native grape for fruit and for wine, he believes to be very important in preventing or removing the malarial cachexia so widely prevalent. The particular malady, or symptom, in question, is believed to be to malarial fevers what black-vomit is to yellow fever, or collapse to cholera. Too much mercury and too much quinia, with too general neglect of emetics, laxatives, and diaphoretics, are thought to be partly accountable for the apparent increase in the obstinacy and debilitating effects of malarial fevers in these latter years.

Dr. E. P. M. Johnson makes some remarks upon the same disease. He agrees with Dr. Heard in deeming opiates very injurious. He omits mercury entirely, whereas the former uses it very moderately. Quinia is prescribed largely by Johnson, and sparingly by Heard. The bowels are to be kept well open, as directed by both.

A speedily fatal case of hydrophobia, in a child, was greatly relieved in its last hours by chloral, given by the rectum. The dog showed no signs of disease till two days after biting the child.

A somewhat full synopsis of recent advances in surgery is prepared by Thos. D. Watten, M.D.

A large number of surgical cases and brief papers must be passed without notice. One curious case is reported, where a squirrel's tail, passed up the male urethra, became the nucleus of a *vesical calculus one and a half inches by three and a half inches in its diameters*. The stone was found to contain the tail, to the length of five inches. After the operation of lithotomy, the wound of two and a half inches in length was closed by two stitches. Ten days later, the surgeon found his patient up, and well, though, through some mistake, he had received no medical attention since the operation. This is truly a wonderful tale.

Earnest efforts have been made to obtain legislation establishing a State Board of Health, but so far without success.

8. In a report to the *Territorial Medical Society of Colorado*, Dr. Massey deprecates the extravagant pretensions sometimes made concerning the sanitary advantages of that region. In many consumptive cases, however, its climate is very beneficial. Asthma is almost certain to be entirely relieved. Persons suffering under malarial cachexia also find great benefit from its mountain air. Wounds heal kindly with little suppuration. That it gives any exemption from pneumonia, rheumatism, neuralgia, and digestive troubles, the reporter denies. Cardiac, renal, and cephalic diseases, if we understand the writer, may be rather aggravated in Colorado.

Dr. F. J. Bancroft suggests, that in certain cases phthisical patients may be benefited by the drainage of pulmonary abscesses and cavities. Much harassing cough, burrowing, or absorption of matter, may be prevented by forming a direct outlet through the thoracic walls. A tube with valve opening only outward is suggested. It is claimed that Colorado is especially exempt from inflammatory action in chest-wounds. A man who was accidentally shot through a vomica, recovered from wound and phthisis. Three other cases are instanced where drainage led to recovery, or much prolonged life.

W. H. Williams, M.D., reports a case of umbilical hernia in an adult woman. Taxis at last failing to reduce the tumour, after several times relieving strangulation, an operation was performed. The tumour was compared in colour and size to a ripe egg-plant. Strangulation was easily reduced, but the attempt at a radical cure wholly failed. The integuments over the hernia had become very thin.

B. L. R.

ART. XXX.—*City Health Reports.*

1. *Third Annual Report of the Board of Health of the City of Boston.* 8vo. pp. 127. 1875.
2. *Eighth Annual Report of the Board of Health of the City of Dayton.* 8vo. pp. 23. 1875.
3. *Report of the Health Officers of the City and County of San Francisco, for the year ending June 30, 1875.* 8vo. pp. 77.
4. *Eighth Annual Report of the Board of Health of the City of St. Louis for 1874.* 8vo. pp. 107.

1. This is more exclusively a health report than that of our own city, inasmuch as the Boston organization is not charged with the registration of vital

phenomena. Deaths are reported, but only in such ways as may illustrate the sanitary conditions existing during the year. The tabular statements required are, consequently, comparatively few and simple.

The deaths each week from some dozen prominent diseases are represented upon coloured charts. Two very large charts also exhibit the daily mortality, "total," from "diarrhœal" and from "zymotic" diseases, in connection with temperature (mean and extreme), humidity, and rainfall.

Two deaths at one hundred and six years, and one at one hundred and five, are reported, but no particulars are given.

Cholera infantum, contrary to Philadelphia's happier experience, prevailed with unusual severity in Boston in 1874. The greatest mortality was later than in Philadelphia, occurring with little variation from the last week in July, through half of August, and remaining even into September higher than in the middle of July.

The sewerage of the city is in a very bad condition. Many sewers open along the wharves and give rise to offensive and hurtful emanations at low tide, while the obvious effects of high tides can be little less harmful. Large districts discharge their sewage into the shoal waters of the bays and rivers that surround the city, causing accumulations which there is not current enough to remove, and which also are sometimes exposed at low water. The Board believe the time has fully come for the devising and adoption of some great and general system of sewers, which shall obviate existing evils, and suffice for the needs of many future years.

Dr. F. W. Draper presents a paper giving results of examination into the air of school-rooms, and the provisions for renewing it. This is a capital article. The practical recommendation is made that a sanitary inspector of schools be appointed—an intelligent physician who should devote his whole time to his duties. Something of the kind is badly needed.

Prof. W. R. Nichols reports upon various articles, concerning which the Board desired information as to purity or harmlessness. Various "bitters" were examined as to amount of alcohol and solid matters. "Oxygenated Bitters" contained also 3.7 per cent. of sulphuric acid! Castor oil capsules, of Dundas, Dick & Co., were found free from croton oil. These are stated by the makers to contain each one-sixth of a grain of podophyllin. "Castoria" contains none of the drug indicated by its name: but owes its action to senna, taraxacum, wintergreen, and soda. A sample of beer contained four and one-half per cent. of alcohol; but no strychnia, cocculus indicus, or other adulteration.

2. From this modest *Report of the Board of Health of the City of Dayton*, we learn that two sanitary policemen are employed in house to house visitation, whose duty it is to make daily reports as to the hygienic condition of their allotted districts. These reports are specific and minute, enabling the Board to address themselves at once to the abatement of nuisances just when and where they exist. The remarks upon water-supply, slaughter-houses, street cleaning, and sewerage, show correct ideas and worthy aims. We fear, however, that the advisory duties of the Board, however faithfully discharged, are not efficiently complemented by judicious action on the part of the city authorities. The recommendations here made certainly show that there is still room for improvement in the hygienic conditions of the place.

A considerable degree of accuracy is claimed for the reports of births and deaths. These are made up from data gathered by the sanitary police in their semi-annual quests. In a population of about 35,000, the birth-rate is one in

36.04 inhabitants, and the death-rate 13.68. There is a possible error in the population, which might increase the death-rate to 14 or more.

3. The registration of births and marriages in *San Francisco* is admitted to be sadly imperfect. Except in respect to the Chinese population—19,000 out of 230,000—we find no intimation that the death reports are untrustworthy. As here represented, the mortality has been 18.1 per thousand inhabitants. During the previous nine years it has twice been lower, but otherwise higher, ranging from 17.4 to 25.5. If correct, these figures would support the claim of *San Francisco* to the name of a healthy city.

We notice that our Pacific metropolis already complains of that most unpardonable form of municipal jobbery—dishonestly built sewers. *Philadelphians*, too, well know what results from bad and faithless work, in the impregnation of soil, water, and air with the most poisonous of all filth.

The Board justly complains of the inadequacy of a force of two inspectors, not only to watch and examine a territory of forty-two square miles, of which eighteen are settled, but to answer appeals and complaints, and to conduct legal proceedings against law-breakers.

A recommendation is made for the establishment of a large oven, for the disinfection of bedding and other infected materials.

4. The compilers of this report, for *St. Louis*, estimate that not over one-fourth of the births and marriages are properly reported. *Philadelphia* is referred to as an instance where a few timely prosecutions of negligent physicians and clergymen led to an exemplary completeness in the subsequent returns.

We cannot but agree with health officer W. L. Barret, M.D., in deprecating the moral and hygienic influence of women breaking stone, and men dragging a ball and chain in the city workhouse.

Public baths, street urinals, a general abattoir, and sanitary inspection of residences and school-houses, both completed and building, are means earnestly advocated as essential to the public health.

The death-rate for 1874 was only 14.45. Not only is this remarkably low for any great city, but also as compared to that of other years in the same city, it having been 21.36 in 1873. Great exactness is claimed for these returns. A fortunate exemption from epidemics is named as a cause of the exceptionally small mortality in 1874.

In a report from the city chemist, Dr. D. V. Dean, attention is directed to the danger which threatens the public health from the use of ice formed upon stagnant or filthy waters. Cupidity leads to the garnering of such ice, and any remonstrance is met by the assurance that it is not to be used for drinking purposes, which latter assertion is not to be too unreservedly trusted. Some of the samples here examined gave a truly frightful amount of organic matter.

A porous native stone, of almost pure silica, is strongly commended as forming the most effective and lasting filters for household use.

The beer from four breweries has been examined. No *cocculus, nux vomica*, aloe, nor minerals were detected. In two samples sulphuric acid was found. The percentage of alcohol was from five to five and a half per cent.

A bill designed to secure the sale of pure and wholesome milk only, advocated by the Board, passed the House but was killed in the Senate by the distillers and swill-milk producers.

After some sensible remarks as to the evils resulting from porous walls in buildings having damp locations, Dr. Dean gives the results of some tests recently made by him. He first examined, in dry weather, brick from an old

one-story building, upon high ground, dry, well sewered, and well exposed to sunshine. A face-brick next above foundation contained one ounce of water; four feet higher one-half; and just under roof one-twelfth. In a building differently circumstanced, notoriously damp and unwholesome, on high but "made" ground, a face-brick in the fourth row from the foundation was found to contain eighteen ounces of water! As to the capacity for absorption, three bricks from a building in process of erection took up in twenty-four hours from 8 to 15 ounces. From a certain brick-yard, samples of face-brick and pressed brick absorbed $10\frac{1}{2}$ and 11 ounces; and from another, pressed brick drank up $20\frac{1}{2}$ and $18\frac{1}{2}$, all in the same time. These results are certainly startling. We cannot suppose that lateral or horizontal absorption, as from driving rains, could be much different from that which proceeds upward from wet foundations. Such modification of the process of manufacture as should prevent this action should be most earnestly sought.

B. L. R.

ART. XXXI.—*A Practical Treatise on Diseases of the Eye.* By ROBERT BRUDENELL CARTER, F.R.C.S., Ophthalmic Surgeon to St. George's Hospital, etc. With numerous illustrations. 8vo. pp. 584. London: Macmillan & Co., 1875.

THE title of the work would naturally lead us to look for a far more detailed account of the symptoms, pathology, and treatment of eye diseases than is here presented, but the author expressly informs us in his preface that his object is to present, "in a concise and readable form, a general view of the present state of knowledge with regard to the nature and treatment of the more important diseases of the eye," and it is therefore according to this standard that the work should be judged.

In the chapter on the anatomy of the eye Mr. Carter avows his belief in the total decussation of the optic nerves at the chiasm. It seems to us, however, that the statements and investigations of Bisiadecki, Michel, and others who have advanced this view, are by no means irrefragable, and that, while total crossing of the nerves is admitted by all to take place in many animals, nevertheless, sections of the optic chiasm in man, as well as the experiments of Gudden on lower animals, prove that there is only a semi-decussation at the commissure. Gudden has demonstrated, that, if in new-born animals one eye be enucleated, and the animal allowed to grow up, there ensues an atrophy of the optic nerves, tracts, and centres which correspond to the enucleated organ. Rabbits treated in this way showed an entire crossing of the fibres, inasmuch as the optic tract of the opposite side was atrophied while that of the same side underwent no change; in dogs, however, there was a partial atrophy of both optic tracts where the eye of one side only had been enucleated; thus disproving a total crossing for these animals.

In the chapters on the examination of the eye and on the ophthalmoscope, we have a clear description of the author's perimeter and of his demonstrating ophthalmoscope, which are now generally and justly esteemed admirable and useful instruments. We were, however, somewhat astonished in being informed (at p. 86) that we cannot have an aperture in our mirror larger than 2 millimetres for the successful obtaining of the erect image where the pupil is undilated; while daily experience proves that we can most readily obtain a view of the fundus with the direct method and without the use of atropia, when we use the mirrors of Loring or Knapp, each of which has an aperture of 3 millimetres.

The author seems also to lose sight of the fact that a 2 millimetre hole in an ophthalmoscope acts as any other small diaphragm and renders it more difficult to judge of the degree of myopia or hypermetropia, or of the presence of astigmatism.

The pulsation which we so frequently observe in the main branches of the central retinal vein, Mr. Carter attributes to increased intraocular tension, "that is to say, to a state which either is or approaches glaucoma," and thinks, that, while in the young it represents the utmost limit of physiological tension, "in persons beyond middle age in whom a venous pulse either exists or can be produced by very slight pressure, the eye may generally be regarded as standing near the brink of glaucomatous change."

In the chapter entitled "Principles of Ophthalmic Therapeutics," our author is a warm advocate of mercury, as by far the most curative agent in the treatment of syphilis, and we think most justly gives it the preference to iodide of potassium, although recognizing that in the later stages of the disease the latter is more prompt in its effects. At the same time he points out the possible fallacy in arguing from its beneficial effects in diseases of the eye to those obtained in other organs, and calls attention to the theory of Anstie, that it has a special affinity for the organs supplied by the fifth pair.

Mr. Carter's experience in the results of operations for pterygium seems to have been exceptionally unfavourable. He maintains that "it is scarcely at all amenable to treatment. The hypertrophied material may be removed by excision or ligature, but the same kind of action is often renewed in the cicatrix, and the patient seldom derives material or lasting benefit from the operation. A pterygium does no harm unless it extends so far over the cornea as to obstruct vision, and then the best course is to enlarge the pupil by iridectomy."

The operation of Saemisch for serpiginous corneal ulcer is condemned on the ground that it acts beneficially only by diminution of tension, while the resulting cicatrices cause pain and irritation, and iridectomy is therefore advocated in its stead. Corneal abscess is treated by incision from within, "a fine cutting needle is introduced through the sclero-corneal junction," and the abscess evacuated through Descemet's membrane "without perforation of the anterior laminae of the cornea." The wound may be opened from time to time with a probe to evacuate the aqueous, and any therein-contained pus or disintegrated corneal tissue. We are assured that under the influence of this treatment speedy amendment may generally be looked for.

Of the operations of Streatfield and Passavant for the detachment of iritic adhesions, Mr. Carter speaks unfavourably, usually preferring iridectomy. He has seen cataract follow the latter operation, and on this account, as well as on account of the frequent repetitions of the operation which are necessary where there are several adhesions, and the danger of having the iris heal in the incision, he has of late entirely abandoned the latter operation.

In the chapter on cataract, the author takes very decided ground in favour of Graefe's peripheric linear operation; although, in common with most operators of the present day, he, while adhering to the essential principles laid down by its originator, places his incision a little further forward in the cornea. In discussing extraction by transverse corneal incision as proposed by Kuchler, and the various modifications of it since advocated by Liebreich, Lebrun, Warlomont, and others, Mr. Carter expresses himself very decidedly, and his views coincide so closely with our own that we cannot refrain from quoting them at length.

"It would be waste of time to examine these arguments, because transverse corneal incisions stand self-condemned on *a priori* grounds. They have the

single recommendation that it is very easy to make them; and they might perhaps be attempted with advantage by a benevolent traveller who was sojourning among a savage tribe, or by an ophthalmic surgeon upon whom the infirmities of age were creeping, or by one who was prevented by the natural quality of ambisiduousness, from employing better methods with ordinary prospects of success. Even in such cases Lord Melbourne's pithy inquiry 'couldn't you have let it alone?' would be likely to suggest itself to reasonable men. As a matter of first principles an incision through the front of the cornea must, in a large proportion of cases, be followed by adhesions of the iris to some part of the cicatrix, and adhesion of the iris, even if vision is for a time restored, entails a perpetual liability to the occurrence of destructive morbid changes. In the practice of Dr. Kuchler, adhesion confessedly took place in 6 eyes out of 28, and I am told that the same thing has happened in the practice of those English surgeons who have employed Mr. Liebreich's modification of Kuchler's method."

In 1872 the periodic International Congress of Ophthalmology met in London, and our countryman, Dr. B. Joy Jeffries, of Boston, read a paper on anæsthetics, in which he strongly advocated the use of ether, and subsequently by public administrations of it at the various London hospitals, practically demonstrated its capabilities. A number of English surgeons were thereby induced to give up the use of chloroform, and among them is Mr. Carter, who now uses ether exclusively in his practice, on the ground advocated by Dr. Jeffries that "occasional deaths are inseparable from the employment of chloroform, and that there ought to be no deaths in ophthalmic surgery."

In the chapter on the uses and selection of spectacles, Mr. Carter advocates the use of orthoscopic glasses in presbyopia, and remarks, "I am fully convinced that over-fatigue of aged eyes may be an important factor in the causation of both cataract and of glaucoma, and entertain no doubt that a more general employment of prismatic spectacles, in cases specially calling for them, would very materially contribute to the preservation of sight."

An interesting case of eye headache caused by myopia and insufficiency of the interni is related. It was mistaken by the gentleman treating it for some affection of the brain, and the patient was ordered to give up reading for honours at Oxford and to go to Australia. He came home in the same condition in which he went away, and was subsequently permanently relieved by the use of a proper pair of spectacles.

In view of the frequency of such mistakes in diagnosis where the symptoms are really attributable not to any disease of the nervous system but to an eye strain due to an uncorrected astigmatism, we can but regret that the author has given so little space to the discussion of defects of refraction, and of astigmatism in particular.

In strong contrast with the general accuracy of the work is the carelessness which allows so diagrammatic and erroneous a section of the eyeball as that figured in plate 1 to go before the public. The iris is there represented as springing from the inner wall of the canal of Schlemm, and consequently an entirely erroneous idea of the shape and extent of the anterior and posterior chambers is obtained. A comparison with any good cut either of a fresh or carefully hardened eye will show the mistake, a mistake to which we here call attention on account of the importance of a correct idea of the anatomy of this region to all operations on the eye.

In conclusion, we cordially recommend the work to our professional brethren. It contains in clear and explicit language a condensed abstract of eye surgery by a highly educated ophthalmologist of extended experience and good judgment, and cannot fail to form interesting and instructive reading to all investigating the subjects of which it treats.

W. F. N.

ART. XXXII.—*Cyclopædia of the Practice of Medicine*. Edited by H. VON ZIEMSEN, Professor of Clinical Medicine in Munich, Bavaria. Vol. V.—*Diseases of the Respiratory Organs*, by Prof. JUERGENSEN, of Tübingen; Prof. HERTZ, of Amsterdam; Prof. RUEHLE, of Bonn; and Prof. RINDFLEISCH, of Würzburg. Translated by GERALD F. YEO, M.D., of London; A. BRAYTON HALL, M.D., FRANCIS DELAFIELD, M.D., FRANK P. FOSTER, M.D., EDWARD FRANKEL, M.D., JOHN C. JAY, JR., M.D., of New York; and EDWARD W. SCHAUFFLER, M.D., of Kansas City. ALBERT H. BUCK, M.D., of New York, Editor of American edition. 8vo. pp. xiv.—712. New York: William Wood & Co., 1875.

THE present volume is one of the most important of the series of which it forms a part, treating as it does of diseases of the respiratory organs. We are, therefore, glad to see among its contributors men so well known to science as Professors Juergensen and Rindfleisch. The former is the author of articles upon croupous and catarrhal pneumonia, which will be found to contain much information even for those who may be familiar with these diseases. In addition he has also written chapters upon "Hypostatic Processes in the Lungs," and "Pneumonia from Embolism." In regard to the sthenic form of inflammation of the lung, we find him italicizing the following opinion: "Croupous pneumonia is a constitutional disease, and is not dependent upon local cause. The pulmonary inflammation is merely the chief symptom, and the morbid phenomena are not due to the local affection. The hypothesis of a morbid cause is indispensable. Croupous pneumonia belongs to the group of infectious diseases." In other words, he agrees with those who prefer to call pneumonia, febris pneumonica, or lung fever. The principal reasons which he gives for this view of the disease are the following: 1. "During the whole course of pneumonia there is no constant relation between the local and the febrile symptoms, nor dependence of the one upon the other." 2. "Croupous pneumonia is a disease which runs a typical course. No affection which arises from a local lesion presents a career so definitely limited in point of time as is the case with croupous pneumonia."

The danger of death in pneumonia arises chiefly from the combination of two conditions, either of which alone might be insufficient to bring about a fatal result: 1. The interference with the function of the lung. 2. The intensity of the fever. Both of these conditions tend to cause exhaustion of the heart, and Prof. Juergensen, therefore, directs that our treatment shall be so directed that this accident may be avoided. He knows of no better means to accomplish this result than the employment of baths "of the temperature of well-water, which should be administered as often as the temperature in the rectum reaches 104° F. The duration of the bath should depend upon the effect obtained, and should vary from seven to twenty-five minutes." In order to avoid the shock to the heart which is sometimes caused by the contraction of the cutaneous vessels, in consequence of the application of cold to the surface, and which, if not carefully guarded against, may induce fatal collapse, he directs that stimulus shall be given to the patient at the same time. So essential does he consider the abstraction of heat in some cases that he says, if no water were to be had, "I would not hesitate to expose my patient to cold air until the necessary amount of cooling was obtained." "This procedure," he goes on to say, "would subject him to much more discomfort than would result from the water-bath; but I am certain it would do him good."

In addition to the direct abstraction of heat, the author prescribes quinia in half-drachm doses. Whenever evidences of cardiac exhaustion are detected, he recommends the employment of stimulants. He alludes to venesection only to condemn it.

Prof. Rindfleisch and Prof. Ruchle have both written upon phthisis and tuberculosis; the titles of the chapters of the former being—1. Chronic and Acute Tuberculosis; 2. Chronic Tuberculosis—Phthisis; 3. Acute Tuberculosis: those of the latter being—1. Pulmonary Consumption; 2. Acute Miliary Tuberculosis. It may not be known to our readers that the views of Rindfleisch on the nature of phthisis have recently undergone a modification, and that he now teaches “that the first lesion in pulmonary phthisis is a tuberculous infiltration of all the angles and projections situated at the points where the smallest bronchioles become continuous with the acini.” “In this way,” he continues, “circumscribed white nodules are formed which we will call, after Laennec, tubercle-granula.” In order that he may not be supposed to have abandoned his opinion that inflammation plays an important part in the production of phthisis, we will quote the following passage:—

“If we turn,” he says, “now to the question of the priority in time of the bronchitis, and of the formation of tubercle granules, no one can be surprised that, in accordance with my general views of the relationship between scrofula and tuberculosis, I hold that the bronchitis is the primary and the tubercles the secondary lesion. I believe that in the catarrhal secretions of a scrofulous person is contained the tubercular poison which becomes inoculated in the edges and corners of the narrowest portions of the bronchi. A similar secretion can inoculate the projecting edges of the larynx, the vocal cords, other points of the respiratory mucous membrane, and may even be allowed to produce tubercles in the lymphatics of the intestines.”

Prof. Ruchle, while he attaches great importance to inflammation as an element in the distinctive processes of phthisis, believes that it is preceded by some change in the lung tissue, which usually escapes detection, and which, indeed, is probably beyond the reach of our present methods of examination.

The principal of Prof. Hertz's contributions are upon Pulmonary Emphysema, Hemorrhage, Oedema, and Gangrene. We have read them with interest, and we regret, therefore, that we can only refer to them in this brief way.

It gives us pleasure, in concluding this notice, to say that the volume fully maintains the reputation which its predecessors in the series have gained for the work.

J. H. H.

ART. XXXIII.—*Illustrations of Clinical Surgery; consisting of Plates, Photographs, Wood-cuts, Diagrams, etc., with descriptive letter-press.* By JONATHAN HUTCHINSON, F.R.C.S. Fasciculi I. & II. Folio, pp. 1-43. Philadelphia: Lindsay & Blakiston, 1876.

AMONG living surgeons we know no man who has made more conspicuous marks throughout the whole realm of our science than the author of this very handsome work. Most men are satisfied if they may be regarded as authorities in some one branch of medical science, but the distinguished surgeon of the London Hospital has done much and good work in many distinct and separate divisions of medicine. Those who are acquainted with that now extinct annual, the *London Hospital Reports*, will remember how large a share of the labour, both as contributor and editor, was borne by Mr. Hutchinson, and will be pre-

pared to see in this new work valuable additions made to our knowledge of the subjects of dermatology and ophthalmology as well as to that of general surgery.

The reader is warned that the series will be in no wise restrained within narrow limits, but will consist of such remarkable cases as have occurred in the author's own experience, and which from their rarity may be unrecognized by the general practitioner unless he is able to recall the appearances from faithful portraits. It is not intended, however, that unique cases only shall be represented, but cases of general interest will be included, and especially those in which symptomatic indications can be illustrated.

Plate I. consists of one coloured and two plain lithographs, representing the appearances of encephalocele. The surgeon who once studies these pictures will probably be spared the mortification of attempting an operation should he meet with this rare affection in actual practice. Two wood-cuts accompany the letter-press, one of which shows very well the anatomical relations in the dried frontal bone. Mr. Hutchinson's remarks upon the subject are clear and practical, and he wisely condemns any operative interference whatever.

Plate II. is an uncoloured portrait of an ivory exostosis of the orbit. Accompanying the description of this case are also three illustrative wood-cuts.

Plate III. represents instances of the eroding ulcer of Jacob, to which is now conceded the title of *rodent cancer*. Mr. Hutchinson is now satisfied that despite its very slow progress and its indisposition to invade the lymphatics, this disease, from its incurability save by excision, its strong tendency to recur after removal, and its power of extension to all contiguous tissues, is properly entitled to a place among the cancers, and that it owes its individual peculiarities entirely to the tissues in which it originates.

Plate IV. gives three representations of chancres, one showing a very remarkable amount of induration, and which indeed has all the appearance of inflammatory hardening after the use of an escharotic.

Plate V. shows a case of soft sores or chancroids, one of balanitis figurata of a very unusual type, and one of auto-inoculable sores upon the penis and thighs of a child four years old, which healed under simple treatment and were followed by no constitutional symptoms. This case was certainly a most striking one, as, judging from the lithograph, no one could hesitate to style the sores specific, and yet they could be traced to no such cause. It is impossible, however, not to think that there was a missing link in the history, the finding of which would have cleared up the mystery.

In Plate VI. are pictured some very interesting instances of melanotic disease, of which, in its minor degrees, Mr. Hutchinson seems to have seen many cases.

Two cases of hydrocele of the neck furnish the subjects of Plate VII. The prodigious size to which these deformities sometimes attain is well shown. This plate, like the one of encephalocele, is of special value, as its careful study is well suited to give such information as will enable the general practitioner to recognize such a case the moment it is presented to him.

Plate VIII. represents the decline of a case of erysipelas attended with great swelling and discoloration. This case, having been pictured only when the severity of the symptoms began to ameliorate, would be taken, at first sight, merely for one of extended extravasations, the peculiar erysipeloid phlyctenulae being only perceptible upon the fingers. Figure 2 of this plate shows an anomalous affection of the skin, to which Mr. Hutchinson interrogatively applies the name of papillary psoriasis.

These eight plates, with the attending remarks, constitute two parts of the work, and excite high anticipations of their successors. The artistic character of the drawings is of a high order, and cannot fail to afford instruction. The descriptive letter-press consists of condensed and most valuable remarks not only upon the individual cases, but extending as well to the nature and character of the diseases exemplified.

No one can look over the prospectus of the work or the portion of it already published, without being struck by the versatility of Mr. Hutchinson's genius, nor does it seem likely that any one, who from familiarity with his writings, expects a great deal from him, will fail to have his anticipations realized. It remains but, in concluding, to wish the author every success in his undertaking and to hope that it may be carried on as it has been begun.

S. A.

ART. XXXIV.—*On Paralysis from Brain Disease in its common form.* By W. CHARLTON BASTIAN, A.M., M.D., F.R.S., Prof. of Pathological Anatomy in University College, London, etc. 8vo. pp. 340. New York: D. Appleton & Co., 1875.

THIS volume consists of a series of lectures which were delivered in the University College Hospital, London, in 1874, and which the author states have been thoroughly revised, and considerably enlarged by the addition of new matter.

We had hoped that the work would have included a consideration of all that is known about cerebral palsies, but the author has not intended to treat of more than the "common forms" of hemiplegias at this time. Consequently brain tumours, disseminated sclerosis, and some of the other more unusual varieties of cerebral degeneration, are not discussed. The book, however, is complete as far as it professes to go, and is one that will be of great service to the general practitioner, for it gives in an available form the latest researches in the pathology and symptomatology of cerebral hemorrhage, including some valuable remarks on the minute anatomy of the brain and its circulation.

The text-books, generally, pay but little attention to symptoms produced by hemorrhage into or disease of the various parts of the brain; and heretofore any one desiring information in this direction could get but little satisfaction from works in the English language.

In these lectures a large amount of space is devoted to the consideration of this subject, and it is made as clear as possible in the existing state of our knowledge. Perhaps the author speaks a little too positively as to our ability to localize the lesion in the brain from the symptoms which present themselves. For example, in speaking of "cross palsy," *i. e.*, that form of hemiplegia in which the limbs on one side and the face on the other are affected, the author states that in these cases we may always expect to find lesion of the pons Varolii. Indeed, he goes further and says, "but this is not enough; it is indicative of a lesion in the lower or posterior part of one lateral half of the pons, because in this place a single lesion may implicate the outgoing fibres of the facial (that is, its root-fibres) after their decussation in the pons, and also the channels for the conveyance of motor stimuli to the limbs before their decussation in the medulla." Troussseau (quoted by Hammond), however, asserts that crossed paralysis is not always accompanied by lesion in the pons, and gives a case in which extensive lesions in the brain were found but none in the pons.

Some very interesting remarks are made upon the temperature in apoplexy, in which the author following Bourneville divides the cases into four varieties. (1) Cases in which death follows in an hour or two after very large cerebral hemorrhages. Here the temperature is decidedly lowered. (2) Cases in which death takes place in from ten to twenty-four hours, and where the temperature is at first lowered and afterwards rises rapidly. (3) Cases where death occurs in a few days. Here there is an initial lowering of the temperature, then a stationary period, after a return to the normal standard, and thirdly an ascending period in which the temperature steadily rises until death. (4) Cases in which recovery takes place. Here there is an initial lowering of the temperature, followed by a temporary rise and succeeded by a speedy return to the physiological standard. In all these cases the temperature is taken in the rectum. The writer also refers to the lowering of the temperature on the paralyzed side, and speaks of Lombard's thermo-electric apparatus for detecting slight variations in temperature of the body as the best instrument for the purpose.

Considerable attention is given to the various defects in speech, and as the author's investigations into this subject are well known, this portion of the book will be read with particular interest. Dr. Bastian makes several varieties, beginning with defects in articulation, which are most marked when there is lesion in the pons Varolii. Then comes *amnesia*, which the author defines as "a kind of inco-ordination in the action of the higher cerebral centres whose business it is to translate thought into the corresponding motor acts. In *amnesia* Dr. Bastian believes that the lesions are mostly in the cortical gray matter and are situated as often in one hemisphere as the other. Drs. Hughlings-Jackson and Brown-Séquard think that amnesic defects are oftener associated with lesions of the left than of the right hemisphere. *Aphasia* is the condition where the patient is almost unable to speak or to write, although without difficulty in articulation. The lesion here is situated in the left side of the brain, in the great majority of cases, when the patient is right handed, and in the third frontal convolution. It is interesting to find that it has been observed, in some well-marked cases, that aphasia when occurring in left-handed persons is generally associated with left hemi, legia.

There is a still further division made in the defects of speech of *aphæmia* and *agraphia*, the former where there is "an inability to speak only, and not a more or less equal inability to speak and write as in aphasia," the latter when the patient can speak moderately well but cannot write at all.

Dr. Bastian speaks of choreic movements in paralyzed limbs, but does not in this connection refer to Dr. Weir Mitchell, who, we believe, first pointed out this choreic condition following paralysis.¹

There are many other valuable points to which we would like to call attention, but want of space prevents us. We can only recommend our readers to get the book and study it for themselves, and we feel satisfied that they will be amply repaid.

A number of illustrations are introduced to show the topographical anatomy of the cerebral convolutions, and the distribution of the bloodvessels.

W. S.

¹ Am. Journ. Med. Sci., Oct. 1874.

ART. XXXV.—*Outlines of Practical Histology.* Being the Notes of the Histological Section of the Class of Practical Histology, held in the University of Edinburgh. By WM. RUTHERFORD, M.D. F.R.S.E., Professor of the Institutes of Medicine in the University of Edinburgh. 8vo. pp. 72, interleaved. London: J. & A. Churchill, 1875.

WE have not met for a good while with any book which has a more wholesome flavour of the workshop rather than the lamp, than these "Notes of the Histological Section of the Class of Practical Physiology, held in the University of Edinburgh," in which the author is Professor of Physiology. While a few men of great patience, enthusiasm, and skill, will always be in the van in histology as in other branches, yet the signs of the times are all pointing to a generalization and diffusion of such knowledge once a mystery except to the initiated. The very appearance of such books as this shows a demand to be supplied. The establishment of the physiological laboratories in the English schools is one of the healthy indications of reform within the profession itself. We trust the same may soon be said in this country, and that the laboratories where a few voluntary students now work may be made a part of the college curriculum essential to graduation. One medical school in this country has recently negotiated for the purchase of 24 of Beck's beautiful new fifty-dollar microscopes for such laboratory work, and we trust that others will follow this excellent example.

Prof. Rutherford takes a class of 20 to 30 students through this excellent course of normal histology in about 30 lessons of an hour or an hour and a half each. Omitting any description of the microscope or the tissues studied, he devotes his "Notes" to the practical methods of study. "The student is supplied with a Hartnack's No. III A microscope," and a cat or a guinea-pig furnishes the material for study. The preparation and preservation of this material is briefly described. Then he directs the student what to observe and how to observe, and also how to draw and estimate the size of the objects examined. Beginning then with such normal fluids as mucus, saliva, blood, etc., he describes with great clearness and brevity the modes of examining each individual tissue and organ in the entire body, and lastly the methods of freezing, hardening, softening, staining, imbedding, and injecting the tissues and of mounting and preserving the specimens. We should be glad to see such a handy-book republished here. It would stimulate, as well as supply, the demand for such manuals.

W. W. K.

ART. XXXVI.—*The Student's Guide to Human Osteology.* By W. W. WAGSTAFFE, F.R.C.S., Assistant Surgeon to, and Lecturer on Anatomy at, St. Thomas's Hospital, etc. pp. xxvii., 349. Philadelphia: Lindsay & Blakiston, 1875.

WE are glad to see this excellent new manual of osteology. Its text is brief, but clear and full; its subject is treated from some new stand-points, and its plates are not the old threadbare cuts so familiar in most of our anatomies, but new and valuable. Brevity in the text is carried almost too far, by the elision of articles and often of verbs, yet, as the meaning is always clear, we are not

disposed to find fault with that which saves space and time. Each bone is studied by a method which greatly assists the memory, viz., 1. Its situation. 2. Its shape. 3. Its various parts. 4. Its articulations. 5. Its development. 6. Its mechanism and structure. 7. The points of chief importance to be remembered about the bone. The last two points are both novel and useful. The mechanics of the bones and joints have been greatly neglected in most of our hand-books of anatomy, especially the briefer ones for students; but he that would interest as well as instruct the student of "dry bones," can best attain his end by showing the adaptation of their structure to the function they fulfil. Thus, Mr. Wagstaffe's description of the mechanism of the hip and the knee, the hand and the foot, are excellent *résumés* of our knowledge, with some additional points, such as the outline of the articular surface in the head of the femur, which is in three curves, corresponding to the limits of adduction, inversion, and eversion, and no one can read them without increased admiration for the wonderful beauty and wisdom displayed in the structure of the human body. We are glad to see that he adopts the antero-posterior division of both the hand and the foot, a division which explains their mechanism to such advantage; that he has figured and noticed fully the various facets of the patella, and also the extension of the tendon of the *tibialis posticus*, so well described by Mr. Hancock. The internal structure of the various bones he gives quite fully, but by no means exhaustively. He has incorporated here his studies and plates from the *St. Thomas's Hospital Report* of 1875, and has thus made accessible to the profession a very important and hitherto much neglected point in osteology—a point not only valuable philosophically in explaining resistance to pressure and strain, but also in controlling often the direction of fracture. We should, however, have been glad to see, with the long bones especially, an additional heading of brief practical remarks on the application of the structure, shape, and mechanism of the bones and joints in the production and diagnosis of the diseases and injuries of the bones, and especially of dislocations and fractures.

The order in which the bones are studied we do not like. While it is true that the bones of the upper extremity, with which he begins, are simpler and easier than the vertebræ and the skull, yet the vertebral column, at least, should come first, since both philosophically and mechanically it is the foundation of the skeleton. The head may well be left till the last. With each bone the author has adopted the excellent plan of giving the English, German, French, and Latin synonyms.

The wood-cuts and plates are generally excellent. Except one plate and a few admirable wood-cuts from Ward, they are new. The plan of indicating the muscular attachments by red lines on the darker lithographs of the bones, gives that clear, sharply-cut contrast in most cases, the want of which is the defect in many more elaborately finished engravings. Indeed, even here the lithographs are often too much shaded, and therefore lack clearness, as in the petrous bone, and especially in the sphenoid, which should be at least double its size. The names in the plates, also, are too much contracted. The anatomist would understand them, but the student, to whom this is a guide, might guess long over "Fac. for Infra Sp." and "Outer Cond. R." in the humerus, "Pacch. Depr." in the frontal, or "Gen. Tub." and "Mylohy. Gr." in the lower jaw. In pl. xi. from Holden, we must protest against such horizontal and parallel ribs, and, in the side view, against an ensiform cartilage on a level with the lower border of the cartilage of the eighth rib, a position which the opposite figure at once contradicts. Moreover, the side view makes the sternum a curved bone instead of three nearly straight lines corresponding to its three divisions.

In the excellent plate of the contrasted male and female pelvis (xiv.), we are glad to see that he has given the proper obliquity of position, showing the coccyx slightly above the level of the pubes.

A brief outline of the bony landmarks of the body, a subject of vital practical importance, and a full index conclude the volume. The index rather oddly includes scraps of philology and biography, in giving the derivation of words, especially from the Latin or Greek, or from the early anatomists. These last, too, are not always accurately given. Thus Mr. Wagstaffe speaks of the "Casserian" ganglion, instead of naming it from the Viennese anatomist, Gasser. Casserius does not even mention the ganglion. Eustachius is recorded with the date 1570, and Fallopius 1560; yet they died respectively in 1574 and 1563.

When another edition of this excellent work is demanded, we would also suggest that the joints be included in it, since, except in the first plate of the entire skeleton, the relation of the bones to each other is entirely unrepresented in the plates of the separate bones, and because a good, clear, and short account of the articulations on the same general plan would be a most valuable addition to our present literature.

W. W. K.

ART. XXXVII.—*Lectures and Essays on the Science and Practice of Surgery.*

By ROBERT McDONNELL, F.R.S., etc. Part II. The Physiology and Pathology of the Spinal Cord. pp. 137 to 320. Dublin: Fannin & Co., 1875.

HAD the title of this book been "Lectures and Essays on the Physiology and Pathology of the Spinal Cord," it would have expressed its scope clearly, but what it has to do with the "Science and Practice of Surgery," except in so far as Physiology influences all the practical branches, we are at a loss to see. Scarcely a single surgical remark is to be found in the entire work, and what is stated is neither new nor important. In general, the text is as well expressed as it is beautifully printed. But we see no reason for publishing these lectures and essays. They are mainly a re-statement of the experiments of Brown-Séquard and an unimportant commentary on them, with a few references to Bernard, Van Deen, Prochaska, Radcliffe, Stilling, etc. And as if this re-statement were not enough, some experiments and plates are made to do duty twice.

An exception must be made, however, in respect of the Second Essay, entitled "A New Theory of Nervous Action as regards the Transmission of Sensation along the Nerves" (pp. 217-232). The author rejects the cumbersome system of eleven different kinds of nerve fibres for touch, tickling, pain, temperature, etc. of Brown-Séquard, and applies the undulatory theory of the physical sciences to physiology.

"I conceive," he says, "that the various peripheral expansions of sensitive nerves take up undulations or vibrations, and convert them into waves capable of being propagated along nervous tissue. Thus the same nerve tubule may be able to transmit along it vibrations, differing in character and hence giving rise to different sensations; and consequently the same nerve tubule may, in its normal condition, transmit the wave which produces the idea of simple contact, or that which produces the idea of heat; or again the same nerve tubules in the optic nerve which propagate the undulations of red, may also propagate in normal vision those which excite the idea of yellow or blue, and so for the other senses" (p. 221). "Various solid and liquid bodies, as we know, exercise

a selective absorption both for heat and light, in virtue of which certain rays are set apart to be stopped, while certain others are allowed to proceed; after an analogous fashion, certain nerves exercise a so-called selective power, permitting certain undulations to proceed, while those of a different wave-length are intercepted. Most substances, including those that are transparent for light, are generally opaque for dark heat of great wave-length, and small refrangibility. So we have no reason to think that heat can excite in the retina undulations capable of being propagated by the optic nerve to the sensorium, although light certainly does so" (p. 224).

He who reads this Essay will profit by it, and may throw aside the rest of the book. The theory is simple, commends itself to common sense, and is in accord with both physiology and the other natural sciences. While perhaps distinctly formulated here for the first time, it is, however, an idea that has been entertained and taught for some years by the reviewer and perhaps by others.

W. W. K.

ART. XXXVIII.—*On Compression of the Fœtal Head by the Forceps and Cephalotribe.* By HUGH L. HODGE, M.D., Philadelphia. Reprinted from "Journal of Obstetrics" for May, 1875. 8vo. pp. 29. New York: William Wood & Co.

THIS pamphlet contains the last contribution to science of the late distinguished Professor of Obstetrics in the University of Pennsylvania, and embodies his views, and the results of his experience in the use of the forceps as tractors and compressors, and also of the "*compressor craniæ*." The paper is clearly written and very forcibly expressed; and coming from so high a source is well worth a careful perusal. To give some idea of its contents, we will present in order the several propositions as set forth by the author.

1. "The vault of the fœtal cranium is so constructed as to render it capable of compression."

2. "Compression does actually occur in labour."

3. "Compression of a fœtal head at term can be effected to a great extent with safety to the child."

4. "The death of the fœtus during labour from pressure results from two causes: 1st, the diminution or suspension of the functions of placenta and funis; and 2d, from the cessation of the circulation generally."

5. "Compression upon the head of the fœtus can often be made by the forceps, not only with safety, but with great advantage during labour."

6. "Delivery in moderately contracted pelvis can be effected with greater safety by the forceps than by podalic version."

7. "The obstetric forceps, when well constructed, is the best extractor in cases of dead children, and also in cases of craniotomy."

8. "The introduction of cephalotripsy into obstetric practice by M. Baudelocque, Jr., should be regarded as the greatest improvement in operative midwifery since the seventeenth century."

Prof. Hodge was a strong advocate of the application of the forceps in reference to the fœtal head rather than the mother's pelvis, and after numerous alterations and experiments, finally perfected the instrument which bears his name, and has gone into such extensive use in this country. Speaking of applying the forceps with the blades "as nearly coincident as possible with the occipito-mental diameter of the head," he remarks, page 13: "This is in contravention of the German practice, followed by many English practitioners, even by Dr. Barnes in his recent excellent work, of applying the blades of the

forceps to the sides of the pelvis irrespective of the position of the head, a practice which I must regard as unscientific and often very detrimental." Prof. Hodge also strongly favoured the use of the forceps in moderately contracted pelves, over the employment of podalic version, as more safe to the mother and child; provided there be not less than three inches in the conjugate diameter, and the instruments of suitable character. He was certainly very ingenious in contriving instruments for obstetrical purposes, and very successful in the use of them.

R. P. H.

ART. XXXIX.—*The Cholera Epidemic of 1873 in the United States.* Government Printing Office, Washington, D. C., 1875. 8vo. pp. 1053.

THIS portly volume, prepared in obedience to an Act of Congress, contains much valuable matter not strictly required by the enactment and not indicated by its title. It opens with a brief but excellent essay by Dr. John M. Woodworth, the Supervising Surgeon U. S. Marine Hospital Service, exhibiting the agency of the mercantile marine in transporting cholera to our shores, and making suggestions for prevention. Dr. Woodworth, as well as the other authors of this work, is a firm believer in the causation of the disease solely by the introduction of specifically diseased ejecta into the bodies of the new subjects. Outside of India, it is maintained that cholera passes from place to place and from person to person only by and through the transportation and ingestion of matters from the stomach or bowels of its previous victims. While cholera excretions in their original wet form possess their infectious qualities only at a certain stage of decomposition, and are innocuous before and after that period, yet if dried during the condition of activity they may and often do preserve their baneful potency for many days or weeks. Instances of attacks of cholera soon following the unpacking of clothing which had been worn in some far distant land during epidemics of the disease, are very numerous and of unmistakable significance.

It is worthy of notice, in view of his very extensive researches and experience, that Dr. Woodworth has very great faith in the prophylactic power of sulphuric acid. In treating the developed disease, also, he believes this drug is the most successful.

The portion of this work indicated by its principal title occupies some five hundred pages. The congressional resolution provided for the appointment of an army surgeon, who should visit localities where the epidemic appeared early or with special virulence, consult and question the local health-boards and medical men, and learn by personal observation and inquiry the facts concerning its origin, character, and conditions. To this duty the Surgeon General appointed Asst. Surgeon Ely McClellan. Considering that the foci of disease to be examined numbered two hundred and sixty-four, and that the allotted time was only eight months, it is not surprising that Dr. McClellan was forced to avail himself very largely of the observations of physicians resident in the infected places. Circulars were sent out asking such medical men to communicate the particulars of the first appearance of the epidemic, its progress, peculiarities, etc., and to give some account of the sanitary condition and influences of the neighbourhood. In this way were collected, and are here presented, reports from separate counties, towns, and cities, in the score of States visited by cholera in 1873. These are generally very full and satisfactory. In many cases the physician writing was connected with the local health-boards.

The great cities of the South and West were visited in person by Dr. McClellan, and the history and conditions of the epidemic carefully studied.

Several admirable chapters present the general results of the whole investigation. One of these gives a brief clinical history of the epidemic. That the disease was nothing less than the regular, malignant, Asiatic cholera, is stated, to be unquestionable. The knowledge and use of sanitary and preventive measures, rather than any modification of type, are the means which limited its ravages in the great cities. A condensed statement of the symptoms, stages, and sequelæ, of the disease in 1873, is followed by some twenty-five typical cases, reported by different observers.

Treatment, as might be anticipated, was found to be extremely varied. Calomel, however, was used more than any other drug. Used with opium it was undoubtedly of extreme use in arresting the premonitory diarrhœa. Of the cases of developed cholera reported, those treated by calomel alone exhibit a mortality of 23 per cent.; by calomel and opium, 31 per cent.; by these with acetate of lead, 40 per cent.; by opium, calomel, and stimulants, 50 per cent.; and by stimulants alone, 59 per cent. "Preparations of iron" are credited with a mortality of only 33 per cent. The number of cases subjected to the "acid treatment" was only 64, of which 8 per cent. died. The total mortality among the 7356 cases collected was 52 per cent. The experiments of Nedswetzky, in 1872, are here given, showing the effect produced upon the bacterium of cholera dejections by the addition of various drugs. Tannic, sulphuric, nitric, and muriatic acids, chlorine water, chloroform, and sulphate of iron, killed the animalcules promptly. Other drugs used for cholera did not destroy vitality, though applied very freely.

A chapter upon the etiology of the epidemic is remarkably clear and conclusive. The facts are exhibited in the form of concise propositions, with the evidence establishing each. That all predisposing or favouring causes of cholera will fail without the necessary infectious particles from a previous case; that these particles are capable of diffusion in many ways, both well known and little suspected; that this epidemic and all similar ones are traceable to imported infection; and that the virulence of the epidemic once started is largely dependent upon the hygienic surroundings, these are some of the principles which seem there to be clearly proved. As a matter of fact, Dr. McClellan does not hesitate to assert that this epidemic was due to infected fabrics in the luggage of emigrants from cholera districts in Europe; and that it was more than once reënforced in the same manner during the summer of 1873.

The general character of the author's next chapter, upon preventive measures as illustrated by the facts of 1873, may be inferred from what has been already written. A national sanitary bureau, one of whose functions should be the forewarning of local boards as to the emigrants about to arrive by a certain ship, when it has learned that these are from, or have passed through, infected districts, is one measure here earnestly recommended. The all-important matter of quarantine should not be left to the varying theories and practices of different health officers, but should be governed by uniform rules founded on the fullest knowledge of the disease. Persons arriving in a community from an infected district should be subjected to close surveillance. They should be compelled for a time to use a carefully disinfected privy, and if any suspicion exists that their clothing may be contaminated, this should be purified by hot air and other ordinary means. The time for preventive measures is before the cases have become numerous. Experience teaches that after fright and panic have obtained sway, sanitary precautions cannot be enforced. Popular appreciation of the actual facts as to the infectious

character of the disease will not cause terror and the abandonment of the sick, but rather will lead to the use of those means which will surely limit the epidemic and calm the fears which were due to ignorance.

The sanitary measures adapted to towns, households, and individuals, are briefly but well set forth. Great stress is laid upon the possibility of infection from contaminated water. The united use of filtration and boiling is believed to render safe water otherwise unfit for drinking.

In a very curious and interesting chapter illustrated by maps, Dr. John C. Peters traces the route pursued by the epidemic of 1873. He shows that cholera was brought into Persia from India, by the innumerable trains of pilgrims and traders, in 1867, in 1868, and in 1869. In the latter year the disease appeared in Russia, first in two cities which were visited by great numbers of pilgrims and traders from Persia and elsewhere. After several months it reached Moscow, and, in August 1870, broke out in St. Petersburg. In a short time it became widely diffused throughout Eastern Europe. By 1873 the epidemic had extended its ravages over the western portions of the continent, and reached our shores in the persons and effects of emigrants.

We now come to Part Second of this great work, being a History of the Travels of Asiatic Cholera, prior to 1873. This portion is the joint production of McClellan and Peters, the latter dealing with the disease as it prevailed in Asia and Europe, while the former describes the course of American epidemics. A chapter is assigned to manifestations prior to 1817; and one to each of six great visitations of the disease subsequent to that date. These accounts are well illustrated by numerous maps. The histories of the more recent epidemics are, to a certain extent, histories of medical opinions as to the origin and communication of the disease. As such they are extremely interesting.

A chapter upon cholera in India graphically portrays the manners and customs of the people among whom the disease originates and is ever present. A more sickening picture of superstition, ignorance, filth, and suffering, cannot be imagined. The circumstances of almost incredible foulness and unhealthfulness which surround the people in their homes, are intensified tenfold when they flock in scores and hundreds of thousands to the countless shrines which demand their worship. The horrors of the long and weary journeys, and of the protracted sojourn near the holy places, are too repulsive and pitiful to be described. The mortality attendant upon these pilgrimages is perfectly frightful.

The third grand division of this work is by John S. Billings, M.D., Asst. Surgeon, U. S. A., under the title of "Bibliography of Cholera." There is here presented a list of books, essays, and articles in journals, wholly or mainly relating to cholera. The length of the list is appalling. It occupies over three hundred pages, and must contain six or seven thousand references. The matter is classified in a convenient and thorough manner. It represents an amount of hard work painful to contemplate, and not of the sort to win applause from the multitude. Yet the patient industry here expended makes smoother the pathway of all subsequent investigators.

The entire work is a credit to its authors, and one to which the profession may point with justifiable pride. Its mechanical execution, however, is far inferior to that of the Medical and Surgical History of the Rebellion, also published by Government, and is not so good as the subject-matter deserves.

B. L. R.

ART. XL. — *A Treatise on the Diseases of Infancy and Childhood.*

By J. LEWIS SMITH, M.D., Physician to the New York Infants' Hospital, etc. etc. Third Edition, enlarged and thoroughly Revised, with Illustrations. 8vo. pp. 724. Philadelphia: Henry C. Lea, 1876.

THE profession generally seem to hold the same opinion of the merits of this book as we expressed when first called upon to review it in 1869; for the rapid exhaustion of two editions has rendered the issue of a third necessary. In preparing the present edition for the press, Dr. Smith has rewritten some of the chapters. This is noticeably the case with the one on diphtheria, which is now much fuller than before. It is well known to our readers that Oertel and other German observers attach great importance to the presence of certain forms of micrococci in the false membrane of this disease. The author, however, after a careful consideration of the whole subject, comes to the conclusion that these gentlemen have exaggerated the part played by these fungous growths, which simply find a convenient nidus in the false membrane. They cannot be regarded as the specific cause of the disease, since the same forms are occasionally found in the throat when diphtheria is certainly not present.

In regard to the connection between diphtheria and pseudo-membranous laryngitis, Dr. Smith expresses himself as follows:—

"There can be no doubt that there is a membranous croup which is quite distinct from diphtheria. I saw many such cases in New York prior to 1858, when there had been no diphtheria in the city for many years. In no one of these cases was there the history or any evidence of contagiousness; but, on the other hand, as they occurred singly, the proof was strong of their non-contagiousness. Nevertheless, at the present time, when the diphtheritic poison is so abundant in the atmosphere, we certainly have few cases of membranous croup which are not diphtheritic, or do not become such. It is not impossible that the exudate of true croup affords a nidus in which the diphtheritic virus lodges and multiplies so as to transform a simple croupous into a diphtheritic inflammation, just as we have seen scarlatinous pharyngitis become diphtheritic. In no other way can I explain the comparative infrequency of croup as we observed it in former times."

Dr. Smith has also made several additions to the book; among the most important of which is an article on cerebro-spinal fever, in which he takes the ground that the disease is a general one, the principal manifestations of which are not always to be found in the meninges of the brain and spinal cord. The disease has a special tendency to attack children under ten years of age, for in New York during the epidemic of 1872, three-fourths of the whole number of cases occurred in patients under this age. Dr. Smith's views will, however, be found expressed at length in an able article recently contributed to the *American Journal of the Medical Sciences* (October, 1873). Notwithstanding these numerous additions, the book remains of the same size as before, the publisher having been able to bring about this very desirable result by a judicious change in the type employed.

J. H. H.

ART. XLI.—*Medical Diagnosis with Special Reference to Practical Medicine, A Guide to the Knowledge of Discrimination of Diseases.* By J. M. DA COSTA, M.D., Professor of Practice of Medicine and of Clinical Medicine at the Jefferson Medical College, Philadelphia; Physician to the Pennsylvania Hospital, etc. etc. Illustrated with Engravings on wood. Fourth edition, revised. 8vo. pp. 835. Philadelphia: J. B. Lippincott & Co., 1876.

THE demand for a fourth edition of this work sustains the opinion of its merits which we expressed in a notice of the last edition.¹ The work is now in the twelfth year of its existence, and it is as well suited to the wants of the medical student and practitioner now as when it was first issued in 1864. In looking over the recent edition, we find introduced the fruits of the author's original observations in relation to over-strain of the heart, "respiratory percussion," and other topics. Additions and changes have been made especially in the chapters on nervous diseases and fevers, in conformity with the progress of medical knowledge. We regard the remarkable success of this work as affording gratifying evidence of the importance attached to diagnosis by the profession in this country. While it is undoubtedly true that one may be a skilled diagnostician without being a good practitioner, to be the latter without skill in diagnosis is an impossibility. Accuracy in the discrimination of diseases lies at the foundation of clinical experience and the proper application of therapeutic agencies. It is proof of real progress in medicine that ability in diagnosis cannot now-a-days be disparaged by those who would claim to be considered as *par excellence* practical physicians.

We congratulate the author on the continued success of the work, and we take pleasure in reiterating the opinion that this success is but a fair tribute to its merits.

A. F.

ART. XLII.—*A System of Midwifery, including the Diseases of Pregnancy and the Puerperal State.* By WILLIAM LEISHMAN, M.D., Regius Professor of Midwifery in the University of Glasgow, Physician to the University Lying-in Hospital, etc. etc. Second American, from the second and revised English edition, with additional notes by JONAS S. PARRY, M.D., Obstetrician of the Philadelphia Hospital, Vice-President of the Philadelphia Obstetrical Society, etc. 8vo. pp. 766. Philadelphia: Henry C. Lea, 1875.

THE popularity of the first edition (both English and American) of Dr. Leishman's work having caused its exhaustion in about two years, we have presented to our notice a second edition by the author, followed by an American reprint edited by Dr. Parry. Dr. Leishman has improved the volume by a careful revision, and by rewriting some of the articles, which appeared to him to require it. Dr. Parry has Americanized somewhat the article upon "the forceps," although his advocacy of the instrument of Simpson does not accord with the teaching and practice of a large number of our obstetricians, who believe that for the purpose of traction, the blades should be adapted as accurately as possible to the sides of the fetal head, and that when thus fitted, little compressing force is necessary to cause them to maintain their

¹ *U. S. Amer. Journ. Med. Sciences*, No. 10 October, 1870.

hold, except where there is much resistance on the part of the pelvis. The late Dr. William Harris, of Philadelphia, referred to by Dr. Parry, on page 473, as having used the forceps in about one case in seven; and having passed a period of thirty years without losing a woman from labour, or its immediate effects; made use of during these thirty years, the Rohrer Philadelphia forceps; the Hodge long forceps; Davis' short instrument; and a pair devised by himself, having long light handles, short shanks, light blades, with wide fenestræ, closely resembling the instrument since prepared under the direction of Prof. Wallace. Having a large number of patients in the higher walks of life who became quickly exhausted by labour, he was in the habit of aiding them in their feeble efforts at expulsion by moderate traction with closely fitting instruments, believing this the true mechanical principle by which to obtain command of the fœtus without injury to it or the mother.

Besides frequent comments and additions, through the text, Dr. Parry has added a chapter upon "Diphtheria of Puerperal Wounds." His views upon this subject are already familiar to our readers through his excellent clinical study of the subject published in the number of this Journal for January, 1875.

As a standard text and reference book for students and practitioners of obstetrics, the work in question occupies a high position, and has fully brought up to date the investigations made in recent years by many active workers in the London, Edinburgh, Glasgow, and Dublin Obstetrical Societies, as also those of Continental Europe. With American obstetrical writers of the past generation, such as Dewees, Hodge, and Meigs, the author is better acquainted than those of the present time, whose writings are to be found in journals, rather than treatises or text-books: these defects have been repaired in several instances by Dr. Parry.

Like all other English obstetrical writers, Dr. Leishman has a mortal dread of the Cæsarean operation, or gastro-hysterotomy (called erroneously "hysterotomy" in his work), which we do not wonder at, since using it as a *dernier ressort*, when women are exhausted, the operation in England has been frightfully mortal. A marked difference of result in American experience, as referred to by Dr. Parry on page 547, has given us a different opinion, as to the operation when performed at a proper period of labour; and the investigations of Dr. P. go to prove it much less unfavourable than craniotomy in extremely contracted pelves. As a valuable condensation of obstetric literature and practice, we can cordially recommend the work of Dr. Leishman to American readers.

R. P. H.

ART. XLIII.—*Scarlatina Statistics of the United States.* By THOMAS C. MINOR, M.D. 8vo. pp. 55. Cincinnati: Robert Clarke & Co., 1875.

In this pamphlet the mortality reports of the last census are examined with a view to ascertaining the influence of geographical position, temperature, and altitude, upon the prevalence or fatality of scarlet fever. From a brief *résumé* of the countries known to be afflicted with the disease, or known to be free from it, the author reaches certain conclusions. "Zones of comparative immunity" are noted: in the Eastern hemisphere, from 10° south to 20° north of the equator; in the Western hemisphere, from the equator to 10° of north latitude, and again from 30° to 35°. Within these zones, occasional epidemics arise, when the disease is pandemic; the Caucasian race being most liable to attack. In the two zones first named the outbreak of disease is always due to importa-

tion, and soon dies out. In the third, scarlatina exists in the sporadic form, and "only becomes epidemic when it is pandemic in the higher latitudes." A very hot and very moist climate seem unfavourable to the disease.

The author states the absolute and proportionate mortality from scarlatina in each of the United States, giving at the same time the average elevation of its surface above the sea. The connection between altitude and the greater or less prevalence of the disease does not seem to be well established. Indeed the apparent relation as noticed in one group of States is precisely opposite to that existing in the next. Dr. Minor, however, feels warranted in concluding that "altitude rather favors *[sic]* an increase of the scarlatinous tendency."

As to the effect of temperature, our writer believes that while variations between zero and 65° Fahrenheit have little influence upon the prevalence of scarlatina, yet an average height of 75° or 80° decidedly lessens, and one of 80° to 85° nearly destroys, the tendency to the disease.

The statistics of our Southern States do certainly give some support to the idea of a zone of comparative immunity. The mortality there reported from scarlet fever is many times less than in Northern States. The smaller tendency to the disease existing among the numerous negro population accounts only for a part of the discrepancy. In a notice of the U. S. Census Report, in a previous volume of this Journal, we directed attention to some very extraordinary and suspicious variations between the mortality from scarlatina and measles in States directly adjoining each other. The enormous differences as here reported in regard to scarlet fever, recall to mind the profound distrust then felt. If we were only asked to believe that one out of 98,676 people in Georgia, and one out of 624 in Pennsylvania, died of scarlatina, it would not be so bad. But to find reported a rate in Illinois four times as great as Indiana, and in Missouri eighteen times as great as in Arkansas, excites suspicion of some mistake. Of course, however, we do not hold the writer responsible for the correctness of the census.

B. L. R.

ART. XLIV. — *Transactions of the Pathological Society of Philadelphia*. Vol. fifth. Edited by JAMES TYSON, M.D., Hospital Professor of Pathological Anatomy and Histology in the University of Pennsylvania, etc., Recorder of the Society. 8vo. pp. 258. Philadelphia: J. B. Lippincott & Co., 1876.

THIS volume of Transactions of the Pathological Society of Philadelphia comprises a report of the materials contributed by its members during the eighteen months from January, 1874, to July, 1875, and it furnishes ample evidence of the increasing activity of the Society, as many as one hundred and seventy-one specimens having been exhibited, and five reports of special committees having been made during that period.

The arrangement and appearance of the volume are highly creditable to the publication committee; and as a contribution to pathological knowledge, it cannot fail to be valued.

The nature of its contents does not admit of our giving an analysis of the volume, and a mere list of the communications it contains would not be of interest to our readers.

ART. XLV.—*Note-book for Cases of Ovarian Tumours and other Abdominal Enlargements.* By H. LENOX HODGE, M.D. Philadelphia: Lindsay & Blakiston, 1875.

THIS is a modification of Mr. Spencer Wells's little book for taking cases of abdominal tumours. The form and substance are given in that gentleman's work on diseases of the ovaries; for the benefit of those who are unacquainted with it, we would say that it is arranged for the record of every point in the history, present condition, and progress of ovarian or other abdominal tumours, contains figure-diagrams for drawings of shape and position of the tumour, and pages for the record of treatment, condition of the patient from day to day after operation, etc. As the original work can only be obtained by importing, Dr. Hodge has conferred a benefit upon the profession by placing so great a convenience at command.

J. C. R.

ART. XLVI.—*In Memory of Ernst Krakowizer.* Small 4to. pp. 68.
New York: Putnam's Sons, 1875.

THIS handsome brochure contains, in addition to a biographical sketch of Dr. Krakowizer, the different resolutions adopted by the officers of various hospitals, and also the addresses delivered at a memorial meeting held under the auspices of the German Social and Scientific Society of New York expressive of the high esteem entertained for the deceased, and the respect in which his memory was held.

The biographical sketch read before the New York Academy of Medicine by Dr. Jacobi is an interesting, graceful, and loving tribute to Dr. Krakowizer's memory, and furnishes an instructive account of his career.

Dr. K. was born in 1821 in Upper Austria, and after completing his preliminary education he matriculated in 1840 in the University of Vienna, and by the unwearied industry and ardour with which he pursued his studies, he soon acquired an enviable reputation, the fruits of which he subsequently reaped. The celebrated Professor Schuh invited him to be his clinical assistant, and became his warm friend. Dr. K. seemed now to have a fair prospect of becoming one of the prominent medical men of Vienna, when the revolution of 1848 broke out, in which he took a conspicuous part on the liberal side. The movement unhappily failing, he was subjected to the persecution of the ruling powers, and was ultimately forced with many of his youthful and enthusiastic countrymen to expatriate himself. He sought an asylum in this country, and arrived in New York in 1850. There his extensive acquirements and skill soon gained for him the confidence of the community; he rapidly acquired a large practice, and many responsible and high positions were conferred on him. An attack of typhoid fever, which baffled the skill of his medical attendants, terminated his life in September last, to the great grief of numerous friends and admirers.

ART. XLVII.—*The Popular Health Almanac* for 1876. Edited by FREDERICK HOFFMANN. 12mo. pp. 44. New York: E. Steiger, 1875.

THIS little brochure is an extremely useful one, and we desire to invite especial attention to it. Besides a convenient calendar, it contains much serviceable information in regard to matters of domestic hygiene, as healthy dwellings—their ventilation and warming—clothing, supply of fresh air, pure water, foods and their rational preparation, cleanliness, exercise, etc. etc. Plain instructions are laid down for the first help to be afforded in emergencies—as in cases of burns, drowning, and poisoning.

The dangers and absurdities of nostrums are pointed out, and the composition of many of them, as ascertained by entirely reliable analyses, are furnished.

We had sent to us some time since a Chinese work containing simple directions for the management of parturient women, and were informed by the donor that the wealthy, in China, often purchase many copies of it for gratuitous distribution among the poor and ignorant. This is a form of charity which may be commended, and might be advantageously adopted by nations who boast of a higher civilization. The distribution of the Health Almanac among the indigent and uninstructed classes of the community would not only afford them useful information in cases of emergency, but might warn them against becoming the victims of nostrum vendors, to the injury of their health and the waste of their scanty means.

ART. XLVIII.—*Studi ed Osservazioni intorno ai Malati, accolti in un quinquennio nella Clinica Medica di Firenze, diretta dal Prof. Pietro Cipriani.*

Per il Dott. GAETANO LEOPARDI, aiuto alla cattedra suddetta. Volume primo. Malattie Costituzionali. Firenze: Tipografia di G. Barbèra, 1875.

Notes and Observations concerning Disease, made in the course of five years, in the Medical Clinique of Florence, service of Prof. Pietro Cipriani. By Dr. GAETANO LEOPARDI, Assistant Professor. Vol. 1. Constitutional Diseases. 8vo. pp. 281. Florence: G. Barbera, 1875.

WE hail with pleasure this evidence of the revival of the typographic art in Italy, a country which was the second in Europe to commence the printing of books by movable types. The white paper and clear, distinct letter-press of the volume before us give evidence of what may be anticipated in the future for the art of book-making in Italy. We have rarely seen thermometric records of disease so clearly and beautifully printed as they are in this volume.

The clinical records comprise inflammatory fever; typhoid fever; intermittent fever; the same complicated with farcy; pyæmic fever in a puerperal woman; diphtheria; measles; scarlatina; variola; erysipelas; miliaria; chlorosis; the morbus maculosus of Werlhof; and scurvy. There is nothing specially worthy of notice in the cases, or their treatment. They are chiefly valuable as records of diseased conditions, thermometric changes, and, where death occurred, of pathological investigation by autopsy. Italy had fallen so low in the scale of typographic work, that we are glad to commend so marked a change as this volume evinces.

R. P. H.

QUARTERLY SUMMARY

OF THE

IMPROVEMENTS AND DISCOVERIES

IN THE

MEDICAL SCIENCES.

ANATOMY AND PHYSIOLOGY.

1. *Functions of the Spleen.*—It appears, from the experiments of MM. PICARD and MALASSEZ, that iron is used by the spleen in the formation of the globules of the blood.—*Gaz. Hebdom.*, Dec. 3, 1875.

2. *An Experimental Investigation regarding the Organized Nature of Contagia and Putrefaction.*—Starting from the view that the parasitic influence of micrococci organisms in septic infection will only be decided should it be possible to introduce these organisms into the animal body free from any chemical admixtures, HILLER isolated as perfectly as possible, by methods which he has previously described, bacteria of all kinds, sometimes cultivated by himself, sometimes from blood-serum, flesh infusions, urine, and other putrefying substances, and kept in distilled water. He found such bacteria could be cultivated when introduced into an appropriately prepared medium.

From 0.5 to 1.0 cub. centim. of the water containing the different isolated bacteria was injected daily for nine consecutive days into the subcutaneous tissue, or muscles, or into the veins of rabbits and dogs. In more than eighty such experiments, he never saw inflammation, suppuration, and fever, or any prejudicial effect follow as a consequence, although there might be some passing œdema. Suppurating wounds sprinkled with these isolated bacteria, were not noticeably affected for the worse, and subcutaneous wounds did not suppurate, even when thousands of living bacteria were introduced into them. Notably, there never occurred, after the most varied forms of application of these organisms to dogs and rabbits, any of those constitutional conditions which are known to complicate wounds. An inoculation which Hiller made on himself by subcutaneous injection into the forearm, with the exception of some œdema, was followed by little reaction. Accordingly, Hiller denies that there is any independent mechanical parasitic action, or that bacteria can thrive in living and healthy tissue, or blood. He considers that he has refuted the objection, that in his experiments he had always injected "innocuous" and never purely "pathogenic" bacteria.

Thus Hiller, after an examination of all the results hitherto obtained, will not allow that bacteria have any other rôle in septicæmia than that of being, in virtue of their smallness, ubiquity, and special relation to septic action, a frequent, nay constant accompaniment of constitutional wound-complications, as has been shown by anatomical investigation; that they further act as carriers of the septic poison, inasmuch as they imbibe the poisonous substances of putrid matter, and can thus produce inflammation, abscess, and gangrene;

finally, that they "perhaps" produce or reproduce the septic poison, the possibility of their doing so, not being excluded by the isolation experiments.

In his experiments regarding putrefaction, Miller found that a number of eggs, into some of which he injected, with proper precautions, fluid with bacteria isolated from putrefying substances, and into others, fluid with bacteria cultivated for the purpose—fifteen drops being injected—remained fresh after 10-14 days, but putrefied rapidly when air was admitted. He concludes, with Billroth, that bacteria are in themselves incapable of decomposing albumen by assimilation. He believes that in atmospheric dust, besides bacteria and other living germs, there must be other dead, corporeal, and organic matter, which constitutes the ferment of putrefaction, which might be either a ferment formed from cells or protein substances in the act of decomposing, as Liebig imagined. He proves this by the following experiment: He poured boiling distilled water on dust collected in his room, and allowed hen's eggs to soak in it, and added it to a solution fit for the development of bacteria, but which contained none. Of the four soaked eggs, only two putrefied, one quickly, and one slowly; whilst bacteria isolated from the abundant development which took place in the solution, were injected into eggs without producing putrefaction. From the fact that the dust-infusion itself after several days showed signs of putrefaction, with development of bacteria, vibrios, and afterwards infusoria, Miller concludes that atmospheric dust must, in fact, contain putrescible substances.—*Edin. Med. Journ.*, Jan. 1876, from *Centralblatt*, No. 49, 1875, and *Langenbeck's Archiv*, xviii.

3. *The Transference of Matters from Mother to Fetus.*—At the recent meeting of the Association of German Naturalists and Physicians (*Allgemeine Wiener Medizin. Zeitung*, No. 40, 1875), Dr. BRÜCKE described the results of some experiments which he had made by administering to twenty-five pregnant women salicyl in doses of half a drachm shortly before labour. The newly born children and the mothers were catheterized, and the urine examined for salicyl. The results were the following: 1. The interchange between mother and foetus was very rapid. The salicyl was always given as soon as labour-pains began. In two cases, where the birth took place at the end of ten and fifteen minutes, no salicyl was found in the children. In two other cases, where the children were born forty and eighty-five minutes after the commencement of labour, no salicyl was found at first, but it was present in the urine examined some hours afterwards. In all the other cases, salicyl was found in the children's urine immediately after birth; in these cases, the shortest duration of labour was two hours. Thus salicyl had passed into the organism of the foetus in forty minutes, and had appeared in the urine in two hours. 2. The tissue-change in the child was more active immediately after birth than in the uterus. This was shown by the stronger evidence of salicyl in the urine obtained a few hours after birth than in that removed immediately after birth. 3. Salicyl ceased to be found in the mother's urine at the end of twenty-four to thirty-six hours; in the child's urine, it was found up to the third or fourth day. The liquor amnii was obtained in a pure state in four of the cases, and was found to contain no salicyl; nor was salicyl found in the liquor amnii of several women to whom it was given for six to fifteen days before labour, although it was detected in the urine of the children.—*Brit. Med. Journ.*, Dec. 25, 1875.

MATERIA MEDICA, GENERAL THERAPEUTICS, AND PHARMACY.

4. *Transfusion of Blood.*—The No. of the *Anali Universali di Medicina e Chirurgia* for Nov. 1875, contains the concluding part of an interesting article on this measure by Dr. DE CHRISTOPHORIS. Under the head of "Special Indications for Transfusion," he presents not only those resulting directly from loss of

blood, but numerous diseased conditions requiring an immediate supporting treatment. Thus we have not only Acute Anemia from hemorrhage; but chronic or slow (*leute*) anemia; chlorosis; typhus fever; puerperal fever; scurvy; scrofula; leucocythæmia; diabetes mellitus; blood poisoning; marsh cachexia; cholera morbus; eclampsia; hysterical paralysis; insanity; hydrophobia; chronic visceral diseases, as phthisis, cancer, ulceration of the stomach, and tabes dorsalis.

The cases reported are as follows: 1st. A country woman, 30 years old, affected with *physical prostration and chronic anemia*, the effect of child-bearings and nursing—great depression of forces, stomach feeble, etc. 1st transfusion resulted in restoration of force. 2d transfusion, continued amelioration; blood used, pure venous; appetite good; pulse 84. 34 days later was seized with intestinal catarrh and died.

2d. *Chlorosis*.—Girl 16, chalybeate treatment inefficacious; water-cure and nutritive diet failed. Five transfusions with defibrinated blood in 46 days; progressive amelioration; complete cure; two years later had no return.

3d. *Hydræmia from metrorrhagia*.—Peasant woman, 30 years old, with fibrous tumour of anterior and left lateral parietes of the uterus, incapable of working, subject to fainting; three transfusions with defibrinated human blood, on June 27th, July 2th, and 20th, 1868; cure complete, and no return.

4th. *Marsh cachexia*.—Peasant, 40 years old. Two transfusions with non-defibrinated human blood; attack of suppurative villous pericarditis, "not a rare condition in this disease," and death.

5th. *Splenic leucocythæmia*.—Child 3 years old; spleen much enlarged; stomach very weak; prostration extreme; one transfusion of defibrinated blood, slight signs of improvement for a day, then increase of prostration, and death.

6th. *Chlorosis*.—Woman 26. Two transfusions of defibrinated blood 18 days apart. After first trial respiration fell gradually in twelve days, from 48 to 24, and appetite at once increased, so that in seven days it became almost insatiable. The menses, which had been suspended for two years, returned after first transfusion, and again in 32 days; one year later, menses regular, health good, complexion florid.

7th. *Leucocythæmia*, in a girl of 18, affected by a return of miasmatic fever. Two transfusions in 22 days; catamenia appeared after second, cure.

8th. *Epilepsy*.—Girl of 20; convulsions every day, probable cause chlorosis; transfusion; no fit for eleven days; attack of profuse diarrhœa from drinking abundantly of cold milk, with return of convulsions; passed from observation; cure uncertain.

9th. *Hysteria*.—Spinal irritation with vomiting of long standing, resisting all forms of treatment; transfusion with defibrinated blood; cessation of vomiting; restoration to health.

Much attention has been paid in Germany to the value of transfusion of blood in disease; and the question has been taken up with great interest in Italy: with us it has had but little attention paid to it, except as a restorative after profuse hemorrhage.

R. P. H.

5. *Surgical Anæsthesia in Children by Chloral administered by the mouth*.—Prof. BOUCHUR publishes in the *Bulletin de Thérapeutique* (Oct. 30th) an abstract of a communication which he made to the International Congress at Brussels. Without discussing the relative merits of the various anæsthetic procedures which the surgeon may resort to, he wished to make known to the Congress that in children absolute anæsthesia may be obtained by administering chloral by the mouth. This action of the drug is certain and easy of production, and cannot be obtained in the adult—furnishing an additional proof of the difference in the action of certain medicinal substances in children and adults. Whether it is that the adult cannot swallow without disgust or intolerance a sufficient quantity of chloral, certain it is that he cannot be anæsthetised by it, for it would be necessary to raise the dose to eight or ten grammes, and this is a dose which the stomach either refuses or rejects. In the child, on the other hand, three or four grammes are taken without any difficulty, this producing neither pyrosis, gastritis, vomiting, nor diarrhœa, while it gives rise to a more

or less intense anæsthesia. Prof. Bouchut is enabled to found this statement upon a considerable number of facts, having made very frequent trials of the hypnotic and anæsthetic powers of chloral ever since it was first imported into France, in 1869, by Demarquay, who denied that it produced any anæsthetic effect. Prof. Bouchut has often employed it at the Hôpital des Enfants Malades, in chorea, in cerebral rheumatism, or during the opening of abscesses and the extraction of teeth. He has been in the habit of prescribing three or four grammes for from ten to twelve children daily, sometimes continuing it for three weeks, a month, or longer—so that he can refer to something like from 8000 to 10,000 cases of its employment, and amidst this immense number he has never met with a fatal accident. In one case only did asystolia seem imminent, in a child suffering from mitral insufficiency. In several instances chloralnic eruptions have followed, but these have been of no consequence, only lasting for a few hours. Intestinal irritation has never been produced, even when the chloral, in doses of from three to six grammes, has been continued for a month or six weeks, so that the same child has taken in that time from 200 to 240 grammes of the medicine. Prof. Bouchut, who was the first to use chloral for chorea in 1869, has had cases which, from their violence, seemed to threaten death, and have been cured by chloral given in three-gramme doses, morning and evening, for fifteen or twenty days. It is the best remedy we have for this disease, and is, indeed, absolutely necessary when the movements are so violent as to excoriate the skin and cause death. By forcing upon the patient sixteen or eighteen hours of sleep and immobility out of the twenty-four hours, the skin ceases to suffer, the movements diminish, and the chorea is cured. The same effects of chloral may be produced by chloral suppositories, prepared according to M. Mayet's formula (*Bull. de Thérap.*, t. 88, p. 318); but the rectum is more irritable than the stomach, so that after three or four days the chloral suppositories induce tenesmus and rectal heat and ardor, which compel their discontinuance. The stomach is the best channel of administration of chloral for children, as by it the remedy is easily given, and its tolerance is complete. A quarter of an hour after its ingestion the anæsthesia commences, and at the end of the hour it is complete; and if now an abscess is opened or an incision made, the sleeping infant heaves a sigh, or sometimes moves a limb, without awakening, and again becomes immovable, being quite unaware of what has passed on awakening for four hours afterwards. The same occurs in the destruction of erectile tumours by the Vienna paste, or the extraction of teeth. At the Hôpital des Enfants Malades the sister gives a dose of three or four grammes of chloral at eight o'clock, the child falling asleep in twenty minutes, and at nine the dentist arrives and removes one or even two teeth without awakening the child. By those who know the pain and difficulty of removing teeth in children, the valuable character of this chloral anæsthetic will be appreciated.—*Med. Times and Gazette*, Dec. 11, 1875.

6. *Jaborandi*.—Dr. WM. CRAIG, Lecturer on Materia Medica, Edinburgh School of Medicine, has instituted a number of experiments with this drug, some of which fully confirm what is already known regarding its sialagogue and diaphoretic powers, and has added some points to our previous knowledge.

Dr. C. injected up the rectum the infusion prepared from one drachm of the bruised leaves, and found that salivation and perspiration came on as speedily and as effectually as when the same quantity was administered by the mouth, clearly proving that the active principle of *jaborandi* is first absorbed, and afterwards produces its remarkable physiological effects.

With regard to the active principle of the drug Dr. C. says: "Various chemists have analyzed the leaves, and it is generally believed that its activity is due to an alkaloid, which some have called pilocarpin. The watery infusion of *jaborandi* is acid, but whatever be the acid contained in *jaborandi*, its physiological properties are not due to this acid. Neither are they due to the volatile oil contained in the leaves, and to which they owe their characteristic odour. For I have had prepared for me by J. P. Macfarlan & Co. of this city, a substance called pilocarpin, which undoubtedly possesses the physiological properties of the drug, and yet is not acid, and does not contain the character-

istic odour of jaborandi. It is quite possible, for anything I know, that the acid and volatile oil may possess sialagogue or diaphoretic properties, for I am not aware that they have as yet been isolated; but it is clearly proved that there is a substance which can be separated from jaborandi, destitute of acidity and of the characteristic odour of that plant, and which possesses all the activity of the drug. This substance, called *pilocarpin*, is of a semi-fluid consistence, of a yellowish colour, and possessed of an agreeable odour. It is soluble in water, and is very active. One grain of this *pilocarpin* is nearly as active as one drachm of the leaves. Whatever be the active principle of jaborandi, it is something which is soluble in water, and even the *strained* infusion possesses all the activity of the drug. In this opinion, I differ from others who have experimented with this substance. There are many who believe that to produce the physiological effects of jaborandi, it is necessary to use either an alcoholic preparation, or to swallow the 'dregs.'

Dr. C. considers this view to be erroneous. The whole of his experiments, he says, "have been performed with the strained infusion, and this substance called *pilocarpin*, which I have found to be so active in doses of one grain. It is freely soluble in water. These facts clearly prove that the active principle of jaborandi is soluble in water, and also that the strained infusion possesses all the activity of the drug.

"Regarding the effects of this medicine on the temperature, pulse, and vision, experimenters are somewhat divided. My own experience leads me to believe that they are very small and insignificant. I have never found jaborandi affect much either the heart's action or the temperature of the body, and I have watched carefully for the disturbance of vision observed by Mr. Martindale and others, but as yet have failed to observe it. I believe that many of the untoward results ascribed to jaborandi are due to the fact that 'dregs' have been swallowed in addition to the strained infusion.

"I have not had much opportunity of testing the therapeutic virtues of this drug, but I have tried it in several cases of fever, where the tongue was dry and the mouth parched, and by giving small doses of the infusion every few hours, I was enabled to restore the flow of saliva, and to keep the tongue and mouth moist. I believe that in this respect it will prove of considerable benefit in fevers and allied diseases. It has also been efficacious in removing pleuritic effusions. For this disease it will yet prove a most valuable medicine; for in a few hours, in addition to profuse perspiration, twelve or sixteen ounces of fluid may be withdrawn from the blood, with very little disturbance to the general system, which must tend in no small degree to promote absorption of fluid from the pleural cavities. I understand it has been found useful in diabetes. Several cases of this disease have been successfully treated with jaborandi by Professor Laycock.

"Regarding the applications of jaborandi to the cure of disease, much clinical observation is still necessary before we can assert positively what are the therapeutic virtues of this remarkable drug.

"The following may be regarded as well-ascertained facts regarding jaborandi:—

"1. Its leaves are possessed of remarkable sialagogue and diaphoretic properties.

"2. Boiling water is capable of extracting the most, if not the whole, of these properties.

"3. A strained infusion seldom produces any untoward results.

"4. On account of the large quantity of indigestible fibrous materials in the 'dregs,' these, when swallowed, must produce unpleasant effects.

"5. A substance of a semi-fluid consistence, destitute of acidity and the characteristic odour of jaborandi, may be separated, possessing all the activity of the drug, and which is probably an alkaloid.

"6. The dose will be found to be $\frac{1}{2}$ to $\frac{1}{4}$ grain of this alkaloid, and of the infusion as much as corresponds to five or ten grains of the leaves."—*Edinburgh Med. Journ.*, Jan. 1876.

6. It undergoes combustion in the body, maintains or increases the body weight, and prolongs life on an insufficient diet. It is therefore entitled to be reckoned as a food.

7. If large doses are taken, part of it is excreted unchanged.

8. It dilates the bloodvessels, increases the force and frequency of the heart by its action on the nervous centres, to which it is conveyed by the blood, imparts a feeling of comfort, and facilitates bodily and mental labour. It does not give additional strength, but merely enables a man to draw upon his reserve energy. It may thus give assistance in a single effort, but not in prolonged exertions.

9. The same is the case with the heart; but in disease alcohol frequently slows instead of quickening the pulsations of this organ, and thus economizes instead of expending its reserve energy.

10. By dilating the vessels of the skin, alcohol warms the surface at the expense of the internal organs. It is thus injurious when taken during exposure to cold, but beneficial when taken after the exposure is over, as it tends to prevent congestion of internal organs.

11. The symptoms of intoxication are due to paralysis of the nervous system; the cerebrum and cerebellum being first affected, then the cord, and lastly the medulla oblongata. It is through paralysis of the medulla that alcohol usually causes death.

12. The apparent immunity which drunken men enjoy from the usual effects of serious accidents, is due to paralysis of the nervous mechanism, through which shock would be produced in a sober condition.—*Practitioner*, Feb. 1876.

10. *Researches on the Physiological Properties of Aconite and Aconitina.*—M. GUILLAUD in a thesis on this subject asks, Does aconite, or rather the *Aconitum napellus*, owe all its properties to the aconitina that it contains, and can the latter be substituted for it? Schroff, and more recently M. Gubler, have sought to establish a distinction in stating that aconitina was only a narcotic, whilst aconite was both a narcotic and an acrid. M. Guillaud, however, believes from an examination of all that has been recorded of them, that their action is identical, and may be summed up in these words: that they are capable of producing disturbance of the alimentary canal, of the motility of vision, of respiration, and of the circulation, with conservation of the functions of the brain till death takes place, as it ultimately does, by asphyxia or syncope. Three opinions have been expressed in regard to the action of aconitina. (1) By Holtot and Liégeois, and more recently by Böhm and Wartmann, it is a poison that paralyzes the central nervous system. (2) By Aschscharumow and Gréhant it is believed to be a poison paralyzing the peripheric motor system. (3) Lastly, by M. Leven, it is held to be a poison attacking simultaneously the central nervous system and the muscular system, and paralyzing both. In view of these discrepancies, M. Guillaud took up the subject. His experiments were made on various classes both of the vertebrata and of the invertebrata in the physiological laboratory of Montpellier, and the poison was injected subcutaneously in solution in water, with the addition of a few drops of acetic acid. Many of his experiments gave results in opposition to those of previous experimenters. Thus, M. Leven stated that an animal poisoned with aconitina died without convulsions tranquilly as in death by veratria and digitaline. This is an error. Convulsions are never absent during the first period of poisoning in healthy animals not anæmic from fasting, and even when the convulsions have ceased the muscles long remain irritable to induced currents, which is in direct opposition to aconitina being a muscular poison; on the other hand, M. Gréhant considers that aconitina first paralyzes the motor nerves; and that when given in small doses it acts like woorara. This is also the opinion of Aschscharumow. M. Guillaud considers that this is not a correct view, and these are the facts he regards as being in opposition to it. In addition to the circumstance that the paralysis of the motor nerves is only secondary, and that it only occurs like central paralysis after a period of hyperæsthesia, it is, which is very important to note, always consecutive to this last paralysis. At first,

when an animal is poisoned, the slightest touch, any sound, is sufficient to agitate it strongly. The sensibility then gradually becomes more and more obtuse, and when pinching of the skin or even irritation of the spinal cord no longer produces any effect, an induced current applied over the course of a motor nerve still causes the muscle to contract for some time; the excitability of the nerve appears in fact to die out from the centre to the periphery. If one of the posterior members of the leg of a frog be preserved from the action of the poison by a ligature, contractions occur in the ligatured leg as intense in degree as in the opposite one; and the contractions that ensue on pinching the skin are also equally energetic on both sides—a sufficient proof that, in the first instance, aconitina acts neither on the motor nerves nor on the muscles; at a later period the motor nerves and muscles become successively affected, and the foot preserved alone remains excitable. M. Guillaud's observations of the action of aconitina on the heart are again not conformable to the results obtained by Aschscharamow and Gréhant. These observers find that aconitina in the large dose (for a frog) of a milligramme, first stops the action of the heart, even before it has been able to distribute the poison to the system, and the motor nerves are then not poisoned because they have scarcely received any of the poison. But according to M. Guillaud the heart, whether the dose be large or small, first shows the effect of the poison by beating rapidly, then more slowly, some seconds intervening between the beats; but it does stop till reflex movements have ceased, this of course taking place earlier with stronger doses. The hearts of frogs excited and placed in solution of aconitina seem to be acted on slowly, continuing to beat sometimes for ten minutes, as long in fact as a heart placed in a saline solution. M. Guillaud describes a series of phenomena during the earlier stages of the action of aconitina, viz., disturbances of locomotion, disordered movements, rapid and interrupted respiration, salivation, excessive secretions—all phenomena indicating hyperæsthesia of the nervous centres. The hypersecretions may be regarded as analogous phenomena to the exaggerated muscular contractions, since Rouget has demonstrated the existence of secretory nerves passing to the poison glands of the dorsal natatory membrane of the larvæ of the salamander. The author, resuming his researches, distinguishes three periods in aconite poisoning—a period of contraction, a period of deliquium (*resolution*), and a period of muscular death. Aconitina acts essentially on the centres of the spinal cord and medulla oblongata by first augmenting these excito-motor functions like strychnia and the salts of silver. It then gradually paralyzes them. In regard to the encephalon, the centres of voluntary movements are attacked and much enfeebled, whilst the sensory centres remain, in part at least, uninjured. Aconitina, then, paralyzes successively the sensory nerves, the motor nerves, the sympathetic nerves, and then the muscles. Variations in the dose cause no alteration in the order of these symptoms. It affects the respiration through the medulla oblongata, and not otherwise, and by this action causes death in the higher animals. So also aconitina only acts on the heart, eye, and pupil, through the intervention of the nervous system. Its essential action is, in fact, as Hottot and Liégeois originally maintained.—*The Practitioner*, Dec. 1875, from *Archives du Physiologie*, Aug. and Sept. 1875.

11. *The Action of Chloral-Hydrate and Croton-Chloral-Hydrate.*—J. V. MERING (*Archiv für Experimental Pathologie und Pharmak.*, iii. 185, and *Centralblatt*, No. 37, 1875) states from his experiments, that croton-chloral-hydrate, when given in small doses to rabbits before the cessation of the reflex action from the cornea, considerably retards the respiration; and when the corneal reflex action is extinguished, the number of respirations is diminished by a half. The substance (0.6 gramme) was introduced subcutaneously, or divided in scarcely half as large total doses and injected into the veins. Similar results were obtained with parallel experiments with chloral-hydrate. Croton-chloral-hydrate acts upon the frog's heart similarly to chloral-hydrate, even small doses (0.025 gramme given subcutaneously) causing cessation of its action. Blood-pressure experiments upon dogs, cats, and rabbits were performed with both substances. Small doses diminish the blood-pressure temporarily, and

large doses diminish it continuously, till the blood-pressure curve reaches the abscissa. The pulse-beats are at first increased by both drugs, and this increase lasts somewhat longer with croton-chloral-hydrate. At a certain stage of the experiments the blood-pressure remained continually low, in spite of great blood-movements. This seems to show that the croton-chloral-hydrate extinguishes the arterial tonus, the heart's energy still continuing; this being, as is known, asserted of chloroform and chloral-hydrate. From these and former experiments, there seems to be a great similarity in the actions of the three above-mentioned drugs.

Lastly, the author combats Liebreich's theory of the action of croton-chloral-hydrate. According to this theory this substance in alkaline blood splits up into dichlorallylen, hydrochloric acid, and formic acid, and the former, analogous to aethyliden chloride, is the active factor.

The author employed only the trichlor-crotonate of soda, which even in the cold in dilute alkaline solutions passes into dichlorallylen. This substance was injected into rabbits, and, even when five grammes were injected, it had no effect.—*London Med. Record*, Dec. 15, 1875.

12. *Chloral as an External Application*.—Dr. WM. CRAIG, Lecturer on *Materia Medica*, Edinburgh School of Medicine, states (*Edin. Med. Journ.*, Feb. 1876) that he has tried extensively a lotion of 5 to 15 grains of chloral to the ounce of water and found it an excellent dressing to ulcers and wounds. He says further: "I also used chloral solution as an injection into the sacs of large abscesses, and found that it tended much to diminish secretion and make the parts heal. I found it also a useful lotion for the eye in inflammatory conditions of that organ. It is an excellent application to burns, and very specially where there is a fetid discharge. I also found it a good application to remove warts from the hands and fingers. I used for this purpose a lotion containing 15 to 20 grains to the ounce of water, applied by means of lint and gutta-percha. It causes no pain, and the wart speedily becomes smaller, and gradually disappears.

"I also used it as a lotion to sore nipples and to inflamed mucous membranes. When chloral is applied to an ulcer, a wound, or to the interior of an abscess sac, it causes at first some smarting, but that only lasts for a few minutes, and is soon succeeded by a most agreeable sensation. Patients so treated have frequently told me that soon after the lotion was applied a very agreeable soothing effect was felt in the wound. I believe that in all such cases chloral acts as a local sedative. It produces anæsthesia of the nerves of the part. Wherever there is a wound or ulcer there is irritability of the nerves of that part; and chloral, by soothing this irritability of the nerves, favours the healing process.

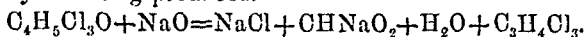
"I have frequently used with good effect an ointment containing 30 to 60 grains of the hydrate of chloral to the ounce in eczema and other allied affections. I believe it to be one of the best applications in such diseases: and a medical practitioner lately told me that he had used it with marked benefit as a local application during an attack of erysipelas of the head."

Dr. P. H. Watson, who has extensively used chloral in various forms, writes to Dr. Craig: "I have in my wards made use of the chloral hydrate for fully six months, and find it quite as active as an antiseptic as carbolic acid or boracic acid. It approaches nearer to carbolic acid in its effects than to the boracic acid, especially in that it is volatile, and thus by its vapour penetrates and surrounds parts to which as a dressing it has been applied with an atmosphere of itself.

"It has a marked advantage over carbolic acid, in so far that its odour is pleasant, resembling some of the ethereal compounds employed for flavouring purposes. It also is absorbed, and, in being so, deadens pain after an operation."

13. *Butyl-chloral*.—In a recent article in the *Deutsche Medizinische Wochenschrift*, Dr. OSCAR LIEBREICH states that Messrs. Krämer and Pinner, in the course of their researches on the substance commonly called croton-chloral, have ascertained that it contains two more atoms of hydrogen than was sup-

posed, and that it is in fact butyl-chloral. When soda or another alkali is mixed with it, it undergoes decomposition, chloride of sodium, formiate of soda, and bichlorallylene being produced.



The physiological action of butyl-chloral is. Dr. Liebreich has ascertained from a large number of experiments, very constant. In rabbits anæsthesia is always found to commence at the head, a state of hypnotism having been already produced. The animals, while sitting quietly, let the head drop; and anæsthesia of this part now appears, while reflex action can be excited in the limbs; from the head, the anæsthesia spreads over the body, and reflex action is not caused by irritation. The respiration and pulse become slow; and, with a fatal dose, the respiration ceases before the pulse. The *post-mortem* appearances differ from those of poisoning by chloral, in that in the latter paralysis of the heart is found, both ventricles being full of blood; while in death from butyl-chloral the left ventricle is contracted and nearly empty, the right cavities and the lungs being charged with blood. With this difference in the *post-mortem* appearance corresponds the difference in the mode of death; in chloral-narcosis general anæsthesia is rapidly produced; *i. e.*, the action of a large dose passes quickly from the cerebrum to the medulla oblongata, and the heart's action ceases while the respiratory movements continue.

In chloral-poisoning, Dr. Liebreich says that artificial respiration is useless; the heart's action can only be restored by the action of strychnia on the cardiac ganglia. With butyl-chloral, on the other hand, the heart's action can be re-excited by artificial respiration. This may be seen in an animal whose thorax has been opened during the narcosis.

Chloral, then causes death by interfering with the cardiac ganglia; butyl-chloral, by its action on the respiratory centre. And just as the ganglion-cells of the heart are stimulated by strychnia, so continued artificial respiration overcomes the narcosis of the medulla oblongata.

Dr. Liebreich points out as a fact of practical importance, that the duration of the stages in the narcosis produced by butyl-chloral is about two-thirds less than in that produced by chloral.

In man as in animals, anæsthesia commences at the head, while reflex action can still be excited on the limbs. Some experiments on a child, detailed by Dr. Liebreich, show that even in the waking state there is anæsthesia of the cornea while the nasal mucous membrane is still irritable. With a dose of chloral sufficient to produce anæsthesia of the eye, there would also be general anæsthesia of the whole body.

Doses of butyl-chloral sufficient merely to produce anæsthesia of the head do not essentially affect the pulse and respiration. In insane adults, Dr. Liebreich has found doses up to 5 grammes to produce sleep and anæsthesia of the head, with maintenance of the muscular tonus and of reflex action in the trunk, so that the patients remained sitting while the head was perfectly anæsthetic.

Though as yet unable to adduce any practical experience on the subject, Dr. Liebreich believes that butyl-chloral may be very useful as an anæsthetic in operations on the head, especially when, as is sometimes the case, it is impossible to give anæsthetics by inhalation.

The practical value of butyl-chloral, Dr. Liebreich says, lies in its property of diminishing sensibility before producing narcosis. He entertained the hope at first that it would be useful in *tic-douloureux*; but in the cases in which he has given it, he has, he says, certainly observed relief of the pain, but not an arrest or cure of the malady. The action of butyl-chloral is of less duration than that of morphia; a comparison of the general effects of the two remedies indicates that butyl-chloral should be preferred to morphia or combined with it. Dr. Liebreich observed the action of butyl-chloral in a most marked manner in two cases of *tic*, in which the tenderness was so great that the patients could not bear to touch the painful parts of the face or to bring a handkerchief near their noses. A *gramme* of butyl-chloral produced complete relief, lasting generally for two hours, each time that the dose was repeated.

Regarding the mode of administration of butyl-chloral, Dr. Liebreich says that at first he tried an alcoholic solution; but he has found that, after long standing, some change takes place which greatly impairs the action of the butyl-chloral. He now orders it in the following form: butyl-chloral-hydrate, 5 to 10 parts; glycerine, 20; distilled water, 130 parts. The mixture requires to be shaken before being used. The dose is half an ounce, followed in five minutes by a second, and in ten minutes by a third. It is well to begin with a small dose, so as to avoid producing hypnotism—that is, where the anæsthetic effect alone is desired. To produce sleep, one, two, or three *grammes* (15 to 45 grains), according to the patient's constitution, are to be given at bedtime.

Butyl-chloral gives relief in painful affections of the teeth; but of course a radical cure can only be effected by attacking the cause of the disease. It should, whenever possible, be taken after meals, and be followed by a copious draught of water.

Whether any advantage is to be derived from combining butyl-chloral with ordinary chloral or with alkaloids, must be decided by further experiments.—*Brit. Med. Journ.*, Feb. 12, 1876.

14. *Action of Nerve Sedatives.*—The *British Med. Journal*, for Jan. 1, 1876, contains some instructive remarks on our chief nerve sedatives.

"The first of these is opium, which seems first to rouse action in the nervous system and then to arrest it. It is well known that by practice and continual consumption of this agent its first action can be prolonged in a surprising manner, as in the cases of confirmed opium-eaters; but there are long reactions of nervous exhaustion and of lethargy after such manifestations. Here we are rather concerned with the action of opium as a medicine, and administered to persons not habituated to its use; the effect of habit being the same with opium as with alcohol. The amount of alcohol which a well-seasoned toper will imbibe with the consequence of gentle exhilaration, would produce profound comatose sleep in one not habituated to its use. . . .

"The effect of a moderate dose of opium upon an ordinary person is to produce sleep. There is first a period of gentle stimulation with cerebral activity, and then follows a sound, but not necessarily dreamless, sleep. If the dose be increased, there results a death-like coma, with great depression of the circulation and slow irregular respiratory movements. If the dose be fatal, 'death occurs generally by failure of the respiration and almost complete extinguishment of the vital functions' (Wood). Thus we see that the higher faculties associated with the cerebral convolutions are first affected, and then ultimately the action of the centres at the base of the brain is abolished. Consequently, we find that voluntary motion disappears while the movements of respiration and the circulation are but little affected; but that a larger dose will entail arrest of action in the movements so essential to life.

"Opium, however, does not act merely upon the cerebro-spinal system; it acts equally upon every nerve-cell, and also probably upon every nerve-fibre. Gschiedden found that morphia acted upon the respiratory centres as well as upon the intracardiac motor ganglia. Opium, too, acts upon the centres in the cord associated with the bladder, and under its influence the calls to empty it are less felt and are less imperative. In a similar manner, opium acts upon the local ganglia in connection with the intestinal canal arresting peristaltic action as well as the intestinal secretion. Consequently, we find that, while we can arrest diarrhœa by the use of opium, its administration for other ends and purposes entails constipation and loss of appetite. That is, by its effects upon the local centres, intestinal movement and secretion are arrested, hence constipation; and by the same action the sensations of hunger are less distinctly felt, less perfectly manifested. In colic, in bulimia, in simple diarrhœa, opium is indicated; as well as in peritonitis, where, by arresting the peristaltic action, it gives relief and limits suffering.

"In this latter action, however, its other effects come into play, viz., its effects upon sensation. Not only does opium act beneficially in peritonitis by arresting peristaltic movement, and consequently limiting the friction upon each other of inflamed serous surfaces, but it deadens the receptivity of the sensory

centres and obviates the consequences of painful sensations. This part of the action of opium deservedly attracts our attention. Let us take some simple form of pain; for instance, onychia of the great toe. A dose of opium lessens the pain; a larger dose brings about a condition where the pain is no longer felt, but still sleep is not produced; a still larger dose, and sleep ensues. On analyzing this action, we find that opium does not act solely upon the encephalic portion of the nervous system, but upon each nerve-cell and each nerve-fibre, in all probability; and that its action is in some such way antagonistic to that of pain. Pain, if intense, does not admit of sleep; but if, after several days and nights of wakefulness brought about by pain, as in a whitlow, for instance, local relief of suffering ensue, then sound dreamless sleep quickly follows. The exhaustion of the nerve-centres from their long wakefulness is followed by long lethargy, as soon as the perturbations produced by painful sensations no longer pass in from the periphery. An analgesic is an agent which lessens pain; and that opium is *par excellence*. It would seem that opium not only lessens cerebral receptivity, but that it also deadens nerve-conductivity. In small doses, it but palliates pain; in large doses, it more perfectly neutralizes painful sensations, and this may be achieved without the condition of cerebral inactivity—sleep—being induced; by a still larger dose, sleep is brought on. In the absence of direct experiment, we are shut up to the results to be obtained by close clinical observation. These lead us to the conclusion that the action of opium is antagonistic to the effects of pain, and that it relieves pain, not only, in all probability, by its effects upon the encephalic centres, but by its effect upon each nerve-fibril along which the pain-producing impression travels, and upon every nerve-cell through which this impression passes. The consequence is, that the impression transmitted from the periphery is diminished as it travels, until, when received in the brain, it is reduced below a pain-producing point; the effect of opium on the cerebral centres being a factor in the production of this result. Consequently, when opium is given in peritonitis, it neutralizes the resultant effects of the friction of two inflamed surfaces, and relieves the system from the consequences of intense pain.

"That opium does so act, is further rendered probable by its effects upon terminal nerve-fibres. Thus, we apply it locally to bruises, to painful ulcers, to inflamed joints, to piles, etc. We utilize its local action in the use of morphia suppositories, in hypodermic injections into painful parts, where we wish to secure local action as well as systemic effects. This carries us a step further. It renders it probable that in peritonitis opium lessens the first impressions of pain by its effect upon the nerve-fibrils in the peritoneum. Not only so, but Brunton found that opium exercised a very decided effect in limiting vascular congestion in a part where he was artificially exciting inflammation. He was led to suppose that a part of the good effects of opium in inflammations is due to this limitation of the blood-supply, just as lifting the hand above the head relieves an inflamed finger. This local effect upon the vascular supply, together with the effects of opium upon the nervous system, goes far to explain its use in serous inflammations.

"Taking sleep to be the most pronounced physiological state of cerebral inactivity, the inquiry how it is brought about becomes highly interesting in a practical point of view. For its production, two factors are requisite. The first is an effect upon the cerebral cells, by which their activity is lessened, and a part of this is their diminished power to attract blood to themselves; the second is a condition of cerebral anæmia. It is of importance to remember these two actions, according as insomnia occurs with an active circulation, a full and bounding pulse, or with a low blood-pressure. When the arteries are full and the heart is acting vigorously, sleep will scarcely be produced except by combining opium with a cardiac depressant, as in its union with antimony in the treatment of sthenic conditions. The effect of opium upon the cerebral cells would in itself be insufficient for the end aimed at, if that action were not aided by a distinct impression upon the circulation. By limiting the blood-supply to the brain in addition, the hypnotic effect can be secured.

"On the other hand, sleep will not be brought about necessarily by producing cerebral anæmia, though loss of function follows arrest of the arterial blood-

supply to the brain, as has been found by experiment; and a good meal, a seat near a warm fire after a long walk in a cold wind, will induce deep sleep in the majority of persons, no matter how lightly they ordinarily slumber. Here the blood-supply to the brain is so diminished that loss of functional activity follows. In the same way, in simple conditions of cerebral activity, an agent producing cerebral anæmia conduces to sleep.

"Most hypnotics possess this double action. Thus, opium not only arrests nerve-action, but both Nothnagel and Gschiedlen have found that, after a brief period of increase in the pulse-rate and in arterial tension, a fall in each follows; and Max Schuler found the vessels of the pia mater to be first dilated, and then distinctly contracted by opium. This corresponds to the first period of stimulation observed by others. Hydrate of chloral also possesses this double action; but with it the effect upon the circulation is very pronounced as compared with opium. It is a difference in degree, however, not in kind. Chloral affects the nervous system, and possesses some power when applied locally to the peripheral ends of nerves, as well as acting upon the circulation. It is, however, found that, as an analgesic, chloral is far below opium and morphia. This we can comprehend from its more limited effect upon the nervous system. On the other hand, where sleeplessness is the result not of pain so much as of a simple inability to get off to sleep, of a condition of cerebral vascularity merely, then chloral is the remedy *par excellence*. In the high arterial tension of chronic Bright's disease, the sleeplessness which ensues is due to cerebral vascularity, and opium does not act well under those circumstances, but chloral suits surprisingly. Where, sleeplessness is due to painful impressions coming in from the periphery, chloral is comparatively useless, and opium is our trustiest agent. It is of importance to recognize these distinctions in the action of these two allied agents; so that in practice they may be used, each in the case for which it is best adapted, and not substituted for each other capriciously. Of course, they may be combined in many cases with advantage. In sub-inflammatory conditions with considerable pain, such combination is especially indicated.

"In consequence of its powerful effect upon the cardiac ganglia, and its depressant effects upon the circulation, chloral must be used but cautiously in cases of cardiac debility. Da Costa urges this in his Toner lectures. Not only in cases of cardiac adynamy, but in other cases where an enlarged and correspondingly powerful ventricle is faltering before a tight stenosis, chloral is contraindicated, as it has been found under these circumstances to produce a paralyzing effect upon the heart of a most undesirable character. In cases of high arterial tension it is very useful, and forms an excellent hypnotic. Chloral is also found to diminish the activity of the uterine contractions in parturition. In some cases of convulsions or chorea, it is also useful; while it has been found of decided service in the treatment of tetanus, giving relief where cure is unattainable.

"As a pure hypnotic, chloral is, perhaps, unequalled; and, in choosing betwixt it and opium, the peculiarities of each case must be fully weighed; in some cases, their combination is indicated. It must be borne in mind, however, that the continued use of chloral is liable to induce a condition of brain-bloodlessness of an objectionable character, a loss of brain-power resulting in ordinary individuals; while under its too free use melancholia is apt to pass into the more pronounced condition of dementia.

"In bromide of potassium, we possess an agent of decided power in controlling the activity of the nervous system. It also possesses some power as a vascular depressant; but its action is very decided upon the nervous system, especially in lessening reflex action. In toxic doses, it produces loss of memory, confusion of thought, with a torpidity and a tardiness of comprehension and answer (Nothnagel). In fatal doses it brings the heart to a standstill in diastole, probably by its effects upon the cardiac ganglia, as well as the action of potash on the muscle of the heart. It is not, however, used largely when the end desired is lowering of the arterial tension, along with the allaying of nervous irritability or excitement; there chloral is more useful, or a combination of the two may be resorted to. Bromide of potassium exercises a very

pronounced action upon the reproductive organs; and, in cases of orexia, or exaltation of the generative instinct, is unequalled by any other remedy we possess. Not only does it have its local effect; it has, as well, an effect upon the transmission of sensations arising in peripheral impressions, and so reduces both the local action and the cerebral effect; but it also lessens markedly the reaction of the cerebral activity upon the parts. This is well shown by the decided effects produced by its free administration in the menorrhagia of young females. In controlling convulsive seizures, it is very serviceable, and it has almost changed the aspect of epilepsy. It is, perhaps, most valuable in convulsive movement the result of far-away irritation. In the epileptic fits associated with irritation in the reproductive organs, it is of inestimable value. In other actions which are reflex, it is markedly useful. In the vomiting of pregnancy, it is now commonly resorted to. In other reflex actions connected with this condition, it is equally beneficial, as in diarrhœa for instance, or in salivation in the pregnant state. Salivation arising from distant irritation other than pregnancy is equally relieved by it.

"In cases of cerebral excitability, or in hyperæsthesia, the bromide is very valuable. In the irritability of young children, or of a preternaturally sensitive nervous system, its action is very marked. In nightmare it is good, associated as it is with gastric disturbance. In those persons who do not bear tonics well, as in those with whom quinine disagrees, producing headache, throbbing, and general discomfort, bromide of potassium given alone with it will produce different effects, and enable quinine to be taken with benefit and comfort. In like manner it acts upon those who cannot take iron without headache, etc. The addition of the bromide to the chalybeate will usually make a marked difference. In convalescence from conditions of debility, where a state of cerebral anæmia with intolerance of ferruginous tonics lingers, the addition of bromide to the steel mixture at once removes the intolerance.

"In these different neurotic agents, each possessing more or less special properties, we have remedies which are of great service in the production of a lessened activity in various parts of the nervous system; and which can be beneficially administered, alone or combined, in a great variety of conditions.

"There is another form of activity which is controlled by neurotic agents, and that is secretion. As regards our present state of knowledge on the subject, no distinct hypotheses can be formed about some of the most marked instances. As regards the use of opium in diarrhœa, we can quite understand its effects from its action upon the nerves of the intestinal canal; by arresting the peristaltic action, the contents of the upper intestines are not so swiftly swept away, while the amount of secretion is at the same time checked. This is all intelligible enough; at the same time the effect of opium, in arresting the activity of the liver and kidneys—in all probability by its effect upon their special ganglia—becomes comprehensible in the lessened formation of urea in baruria, though possibly impaired digestion may be a factor. More special observations have been made, and it is found that, after a full dose of opium, irritation of the lingual nerve does not excite secretion in the submaxillary gland so freely as when opium has not been previously administered. If the narcosis be deep, stronger currents are required to excite secretion, and the quantity of fluid secreted is less. Opium seems to check activity in most secreting organs, except the sudoriparous glands of the skin. The antagonism of opium and belladonna in their action is well seen in their different effects upon the skin. Opium produces free perspiration, while belladonna is very useful for the opposite effect of arresting profuse perspiration. For this purpose, atropia has been resorted to successfully in relieving the night sweats even of phthisical patients. Belladonna, too, checks the activity of the mammary glands, and arrests the flow of milk. It also acts upon the salivary glands, and retards their activity. This, Schiff and Heidenhain think, is achieved by the effect of belladonna in paralyzing the terminal branches of the chorda tympani.

"There is no doubt whatever that neurotics can exercise a pronounced effect over secretion, and that, when added to astringents, opium aids their efficiency very decidedly. Secretion is an action over which nerves exercise control, and, consequently, it is more or less influenced by neurotic agents."

MEDICAL PATHOLOGY AND THERAPEUTICS, AND PRACTICAL MEDICINE.

15. *Changes in the Brain in Typhoid Fever and Traumatic Inflammation.*—Dr. L. POROFF has investigated these changes under the direction of Recklinghausen, at the Pathological Institute at Strassburg, and of course the results have the high authority of the latter. It may be remembered that there are in the brain very numerous spaces for the circulation of serous fluid outside the bloodvessels. Besides those around the bloodvessels, there are spaces around the ganglion cells, the nerve-fibres, and elsewhere. Now, in typhoid fever, all these spaces contain an excess of contractile cells, derived, as the author believes, from the enlarged spleen, closed follicles of the intestine, and medulla of bone. These cells (wander cells) exist in all the spaces mentioned, and even penetrate into the substance of the ganglion cells. But besides this there are changes in these latter structures themselves which are evidences of increased activity—namely, division of the nuclei and of the cells. These facts all lead to the conclusion that we have here an inflammatory process, and they form a physical substratum for the nervous symptoms of typhoid. The author finds in artificially induced traumatic inflammation of the brain in animals processes in many respects similar to those detailed above. There is a similar penetration of the wander cells into the ganglion cells, and the same process of division in the latter. The chief difference is that in typhoid there are wander cells in the serous spaces before distinct changes are visible in the ganglion cells, the reason apparently being the abundance of such cells in the blood. Another difference is the presence of the compound granular corpuscles in traumatic inflammation. This leads on to the detail of results obtained on producing inflammation by injecting pigments such as vermilion and Indian ink into the brain. If this is done, and the brain examined in a comparatively short time, the granules of pigment are to be found in the ganglion cells. In fact, they are hardly anywhere else; these cells seem to have picked them up, and this appears to be evidence that the ganglion cells are active contractile bodies. But after the inflammation has progressed, there appear the so-called compound granular corpuscles, and the pigment is now found in them. This seems to lead to two conclusions—the compound granular corpuscles are contractile, as some other authors have already stated—and they are descended from the ganglion cells. The ganglion cells contained the pigment in the earlier stages, and it is now found in the granular corpuscles, so it is to be inferred that the latter are derived from the former—a conclusion which is rather unexpected. The author compares with the conditions found in these affections, that observed in sclerosis of the brain. In the cases described above, the proper nerve cells are specially involved, in sclerosis it is the connective, or interstitial substance, the neuroglia and its vessels. The ganglion cells suffer secondarily.—*Glasgow Med. Journal*, Jan. 1876, from *Virchow's Archiv*, vol. iii. pts. 3 and 4.

16. *The Pathology of Sunstroke.*—Dr. ARNDT has published a communication on this subject which is interesting, and contains much which is very suggestive. He gives a description of a march of troops on a hot day in July, 1870, with deficient shelter and no supply of water. There occurred numerous cases of sunstroke, of which no less than seven died. *Post-mortem* examination was only obtained in three of them, and even in these the conditions for observation were not perfect. An abnormal paleness was found in all the organs, the brain especially being as good as empty of blood. The paleness depended on emptiness of the smaller vessels and capillaries, there being an overfilling of the larger vessels in many organs, which amounted to rupture in some, so that there were ecchymoses on the pericardium, endocardium, and pleura. This overfilling of the larger vessels appears to have induced some observers to have believed that there is a hyperæmia of the organs in sunstroke; the blood, issuing from these on to the cut surface, gives an erroneous impression of congestion. At any rate, there was anæmia with swelling and

œdema of the brain, liver, and kidneys. The substance of the brain was moist, and in some the ventricles were overfilled. In the liver, kidneys, voluntary muscles, and heart there were appearances usually ascribed to parenchymatous inflammation, namely, cloudy swelling. This condition was not detected in the brain, but there it is difficult to distinguish, and, judging from the œdema and symptoms, it probably existed. Now, such a general cloudy swelling as this is met with in acute infective fevers, where the patients have died at the acme of the disease with high temperature. It is ascribed by some to the altered condition of the blood in these fevers; but the author believes it to be due, both there and in sunstroke, to the high temperature. The heated blood irritates the tissues, and induces this form of inflammation in the various organs involved. For there may be great alteration in the blood in these diseases, but if the temperature keeps moderately low, there seems to be little parenchymatous inflammation. Then, both in these fevers and sunstroke, the symptoms are much more related to the temperature than to the alteration of the blood. The symptoms of sunstroke are described in the various degrees of the affection. It is unnecessary to dwell on them here. There is at first a rise in temperature, with sweating, thirst, and feeling of exhaustion. These all increase in intensity if the case goes on, till a temperature of 44° C. (111° F.) may be reached. The skin is dry and burning; there is a feeling of impending death, violent palpitation and oppression in the chest, and so on. In the lesser degrees the patient may recover rapidly and completely; there is apparently no definite organic change in the organs. But in the higher degrees, the brain seems to be the seat of lesions which may have a permanent effect on its functions. It is to be presumed that the nature of these lesions is inflammatory, and the fact that persons who have had sunstroke are prone to alterations of their mental condition, and even to mental diseases, is an indication of the permanency of these changes. It is to be noted that cases of infective fever, when the temperature has been very high, are said to have a similar tendency to nervous sequelæ.—*Glasgow Med. Journal*, Jan. 1876, from *Virchow's Archiv*, vol. lxiv. pt. 1.

17. *Thrombosis of the Cavernous Sinuses*.—Dr. Dowse read before the Clinical Society of London (Jan. 14) notes of a remarkable case of thrombosis of the cavernous sinuses. The patient was a robust, well-built adult, who received a blow on the occiput by being tripped up. He was slightly stunned, but able to walk home. No immediate cerebral symptoms followed for three days, when severe headache set in. The attacks of headache were varied by seizures of faintness and shivering; he complained also of perversions of the sense of taste. The day before he came under Dr. Dowse's care his vision became cloudy, and in a few hours totally lost. The other special senses were good; cranial and spinal nerves normal; the pupils were dilated; the optic disks were swollen, and patches of retinal hemorrhage were discovered, the veins being large and tortuous. Death supervened upon an attack of erysipelas of the scalp, and the day before death it was noted that there were paraplegia and coma, but no convulsions or rigidity; the temperature rose to 101.2°, and the pulse to 160. No fracture of the skull was detected after death, but both cavernous sinuses were found completely occluded by fibrous clot; the central ganglia were healthy; there was recent hemorrhage into the right anterior cerebral lobe, which contained a clot surrounded by punctiform hemorrhages; at the base of the brain was a protrusion of cerebral substance, apparently due to the presence of the clot. Dr. Dowse further referred to the results of the microscopical examination of the brain, and remarked upon the probable greater frequency of thrombosis of the cerebral sinuses than was supposed. Hemorrhage into the anterior lobe was rare.—*Lancet*, Jan. 22, 1876.

18. *Embolism of Right Posterior Cerebral Artery, with Yellow Softening of the Occipital Lobe, producing Temporary Blindness; Left Hemiplegia, Uncontrollable Movement of the Right Limbs, and Rolling Tendency; Double Optic Neuritis; Death from Ulcerative Endocarditis*.—Dr. BROADBENT read to the Clinical Society of London (Jan. 28) the particulars of this case.

The patient, a young man aged 19, had suffered three years previously from acute rheumatism. Ten days before his admission, he suddenly became blind, and had great pain in the head. Five days later, vision having returned, he lost the use of his left limbs, while the right arm and leg were continually in motion; and, unless restrained, he rolled over and over towards the left, falling out of bed and bruising himself severely. The left hemiplegia and uncontrollable movements of the right limbs continued when he was admitted; the hemiplegia not being absolute, but accompanied by slight rigidity and very considerable impairment of sensation. The patient took no notice of persons or object, but answered questions, and put out the tongue on being urged. His pulse was variable, 120 to 160 or more. Temperature in the right axilla, 99.2 deg. in the left, 100.6 deg. A loud mitral systolic murmur was present. The bowels were confined, and, when opened, the feces and urine were passed in bed. A dose of three grains of calomel was given, and two grains of carbonate of ammonia with two drachms of infusion of digitalis every two hours. Chloral also was given at night. He was ordered a diet of milk and beef-tea, with four ounces of brandy. There was gradual improvement; and, three days after his admission, an ophthalmoscopic observation, previously attempted in vain, was obtained, and the disks were found to present the appearances of marked ischæmia. The pulse was now 108. soft, short, and strikingly dicrotous. A day later, the pulse was 88 and more full. The temperature was still nearly a degree higher in the left (100) than in the right (99.2) axilla. Slight paralysis of the left external rectus of the eye was observed. At the end of a fortnight's stay in hospital, the right limbs were quiet, and there was considerable return of power and sensation in the left side. His speech was rather slow, but there was no obvious impairment of the intellect. Notwithstanding this, however, he not only passed his feces in bed, but threw them about and bedaubed himself and the bedclothes without any regard to decency. The optic ischæmia was marked, but vision was good. The temperature of the right axilla was 99.3; of the left, 100. At the end of three weeks, he passed his excretions naturally. After five weeks, he was up and about, eating well, but pale, and still complaining a little of headache. Impairment of power and of sensation in the left limbs was still perceptible. The optic neuritis was subsiding. Distant vision was good, but small print was not easily read. A systolic mitral murmur was heard. The temperature was still never below 99 deg.; usually 100 deg.; it was now equal on the two sides. But for this elevation of temperature, the patient would have been allowed to leave the hospital. Soon afterwards, however, there were symptoms of splenic embolism, and later of ulcerative endocarditis; and he died from this, four months after admission. On *post-mortem* examination, with ulcerative endocarditis and numerous recent embolisms, there was found softening of the occipital lobe of the right hemisphere from the posterior cornu of the ventricle downwards, and the branch of the postcerebral artery entering the calcarine fissure was occluded and lost in adhesions. It was considered probable by Dr. Broadbent that originally the posterior cerebral artery itself had been blocked up, and not only this branch. The interesting points in the case, on which comments were made, were the temporary blindness, the agitation of the right limbs and rolling tendency, the usual association of loss of sensation and of double optic ischæmia with embolism of a cerebral artery, and the remarkable indifference to decency persisting when the intellect was apparently good.

Dr. Hughlings Jackson thought this the most valuable case of cerebral embolism he had heard of. He had never seen the posterior cerebral artery blocked except in cases of syphilis. He had never seen optic neuritis with cerebral softening; but then he had never met with softening in the posterior lobe so long continued. He had seen optic neuritis in cases where there was no cerebral softening. The patient's sight was good for distance, which was a common condition with optic neuritis. The patient's intellect must have been degraded; but with left hemiplegia he thought the intellect was more frequently affected than with right hemiplegia. Diseases of the left posterior lobe do not frequently cause intellectual defects. Had the patient disagreeable

sensations which he referred to the epigastrium? because the centres of care, remorse, etc., were referred to the posterior lobe.—*Brit. Med. Journal*, Feb. 5, 1876.

19. *Paraplegia from Obliteration of the Abdominal Aorta by an Embolus.*—M. DENOS read before the French Academy of Medicine (Jan. 4, 1876) an interesting note of a case of this kind. The subject of it was a man treated at La Pitié for disease of the heart, followed by left hemiplegia and dysentery. This man, after suffering severe pain in the left thigh since the previous evening, was suddenly taken with complete paraplegia and paralysis of the bladder and coldness of the lower extremities. M. D. diagnosed paraplegia from obliteration of the abdominal aorta by an embolic clot. This was confirmed on the autopsy. Besides lesions of the heart and lungs, there was found above the termination of the abdominal aorta a clot 25 millimetres long, 3 millimetres antero-posterior diameter, and 2 centimetres transverse diameter. This clot extended into the two primitive iliacs, and on the right side into the femoral as far as about two centimetres of the popliteal space; on the left side not quite so far. These clots were of a grayish-white colour, homogeneous, and adherent to the parietes of the vessels.—*Gazette Hebdom.*, Jan. 7, 1876.

20. *Appearance of Paralysis on the side of a Lesion of the Brain.*—Dr. BROWN-SÉQUARD, in a lecture on this subject (*Lancet*, Jan. 29, 1876), gives the following as his conclusions from the facts and reasonings adduced by him:—

"1. It is wrong to conclude from the apparition of paralysis, when there is disease in the brain, that the loss of movements depends upon the loss of function of conductors or centres employed by the will in the production of movements.

"2. That if there is any decussation of voluntary motor conductors anywhere in the base of the brain, it is not owing to the absence of such a decussation that direct paralysis sometimes appears.

"3. That it is owing to an irritation that one-half of the brain is capable, when diseased, of producing paralysis either in the corresponding half of the body or in the opposite one."

21. *The more Common Forms of Enlargement of the Lymphatic Glands.*—Dr. J. WARRINGTON HAWARD, in an instructive article (*British and Foreign Med. Chir. Rev.*, Jan. 1876) remarks: "It has been so much the custom to regard enlargement of the lymphatic glands as the special characteristic of scrofula, that many glandular swellings, having no relation whatever to that disease, are frequently classed and treated as scrofulous. This is especially the case with regard to swellings of the cervical or submaxillary glands; yet it is certain that the majority of these enlargements are of a local and not of a constitutional character. The epithet 'scrofulous' is, in fact, often applied very loosely, and seems sometimes to be used rather as implying some mysterious influence or peculiarity, than as indicating that a person is affected by a definite disease. Yet the symptoms of scrofula are sufficiently well defined, and enlargement of the lymphatic glands is but one, and that not a constant one, of these; and it is no more reasonable to call a child scrofulous because it has enlarged or even caseous cervical glands than it is to apply the term to a chronic inflammation of a joint in an otherwise perfectly healthy child, or than it would be to call a person syphilitic, because he had a periostitis of his tibia. An examination of any considerable number of cases of enlargement of the superficial lymphatic glands, will show the majority of these to have a local origin. The glands most often seen swollen are the cervical and submaxillary, and the greater number of such swellings depend upon inflammation of the scalp or gums. Slight cases of eczema, or impetigo capitis are exceedingly common in children, and are very frequently the cause of enlarged cervical glands; but the eruption being but trifling is often overlooked, and the surgeon's attention asked only to the condition of the glands. So also inflammation of the gums during teething, stomatitis, ulceration of the throat, and

disease of the middle ear may give rise to swellings of the associated lymphatic glands. Glands affected in this way may attain a considerable size, but as a rule will recover their natural condition on the removal of the irritation. Usually several glands are affected; they are not distinctly isolable from the surrounding cellular tissue, nor are they freely movable; they are, moreover, painful and tender; sometimes they suppurate. A peculiarly acute and painful inflammation of the posterior cervical lymphatic glands is occasionally seen in connection with scalp wounds; this usually runs a rapid course, and subsides without the formation of matter. Doubtless if any of the above-named irritations occur in a scrofulous person, the glandular enlargement is prone to show an increase and a persistence, out of proportion to the severity or duration of the exciting cause, and thus it may pass on to caseation or necrosis; but this is by no means necessarily the case, for the lymphatic vulnerability varies greatly in scrofulous persons. Caseation must not be looked upon as the distinctive mark of scrofula, for almost any chronic enlargement of a lymphatic gland may result in caseation, and certainly this process may occur in an otherwise perfectly healthy subject. A single caseous, and in some parts cretaceous, gland was removed five years since from the neck of a boy who was the picture of robust health, and who I know remains so at the present time, and has never shown the slightest trace of scrofula.

"Inflammation and chronic disease of a joint will cause indolent swelling of the associated lymphatic glands; and this in persons who are not in the least degree scrofulous. One of the earliest symptoms of disease of the hip-joint is often a slightly painful enlargement of the inguinal glands, and there are few cases of hip disease in which some swelling of these glands is not found. In disease of the cervical spine also, swelling of the posterior glands often occurs, and it is important to remember that the stiffness of the neck in such cases may depend, not upon the painful glands, but upon the joint disease. The glands do not increase very greatly in size, but will remain for months swollen to about the size of filberts, and slightly tender to the touch; and as the joint disease subsides, they regain their normal condition; excepting the tenderness, they precisely resemble the amygdaloid glands of syphilis. In many robust persons this condition of inguinal or axillary glands ensues upon any severe exercise of the arms or legs, such as rowing, or prolonged walking, and seems to be quite unassociated with any delicacy or weakness of constitution.

"The true scrofulous disease of the lymphatic glands is a slow and almost painless enlargement, usually of the superficial glands, and most commonly affecting those of the groin or neck. It commences simultaneously in several glands; these are at first soft, and surrounded by a little cellular swelling, so that the shape of the gland is not very well defined. As the enlargement increases, the glands become firmer and more defined, in this respect differing markedly from Hodgkin's disease, in which, by their growth, the glands become fused together. In the course of time caseation ensues, and goes on either to cretification or to softening and abscess. Suppuration is much more rarely seen in the deeply situated, than in the superficial glands; and when it does occur, takes place slowly and with scarcely any pain; there is but little disposition to pointing, and the matter is ill-formed and mixed with caseous debris. The skin often becomes extensively undermined and ulcerated, and thus result the unsightly scars and puckerings so often seen in scrofulous persons. An examination of a scrofulous gland reveals a general hypertrophy, with close packing of the cellular elements, leading, by a compression of its bloodvessels, to an anæmia, and consequent want of nutrition of its tissues. Fatty change soon ensues, and a subsidence of the swelling may take place; but usually the degenerated tissues either break down into cheesy material which eventually becomes calcareous; or suppuration takes place, accompanied by some little surrounding inflammation. Even if suppuration has occurred the abscess may not open, but may dry up, leaving only a caseous matter unabsorbed; but this is very prone to become the seat of residual abscess, and thus to cause subsequent trouble; so that an abscess having once formed, its evacuation is to be desired.

"In Hodgkin's disease the enlargement is usually at first confined to one set

of glands, sometimes to a single gland. The affected glands can at first be felt firm and shot-like, and are perfectly defined and separable from the surrounding tissues. They are quite painless, and increase without any sign of inflammation. When somewhat larger, and while still firm, they closely resemble the syphilitic amygdaloid glands, and at this stage are quite indistinguishable from them. Growth, however, rapidly proceeds, and as the glands become larger, they also become softer and less defined, until they eventually become fused into one large lobulated mass, the skin over which remains unchanged. As the growth progresses, it insinuates itself amongst the neighbouring structures, and may spread, by continuity, a long distance from the point of origin before the system generally becomes infected."

The treatment of lymphatic glandular swellings must depend, Dr. H. states, upon the diagnosis. The simple enlargements depending upon neighbouring irritation will, if left alone, subside on removal of this cause, but "if the skin over them is irritated by the application of iodine, poultices, or blisters, they may be provoked, as one so often sees, into still further enlargement, or even suppuration. Nothing in therapeutics is more curious than the way in which some practitioners paint tincture of iodine over every imaginable kind of swelling; to some minds the mere existence of a tumour seems at once to suggest the local application of iodine, and to these, painting with iodine seems their refuge in all cases of doubtful diagnosis, as though changing the colour of the skin were supposed to affect the character of the growth beneath it. Unfortunately the staining is not the only harm done by such applications, for they inflame the skin, and thus keep up or increase the glandular irritation for the cure of which they are used, or render the parts unfit, for a time, for necessary operative treatment. An acute swelling of a single lymphatic gland may be sometimes rapidly cured by puncture. A narrow thin knife should be thrust into the centre of the gland and withdrawn, and the part then covered with a piece of cotton-wool; the pain and swelling at once and quickly subside."

22. *Ménière's Disease*.—M. CHARCOT, in an interesting clinical lecture reported by M. Bourneville (*Le Progrès Médical*, Dec. 11, 1875), relates two cases of Ménière's disease, or, as he prefers to call it, the vertigo of Ménière, which he entirely relieved by the persistent administration of sulphate of quinia continued in one case for nearly three months, and in the other for two months. He says he could relate numerous other cases in which great benefit resulted from the administration of the sulphate of quinia.

23. *Treatment of Epistaxis by the internal administration of Ergot*.—Epistaxis is sometimes difficult to arrest, especially in persons enfeebled by age, anemia, etc. Dr. G. ST. GEORGE states (*Brit. Med. Journ.*, Jan. 1, 1876), that he has found the liquid extract of ergot very serviceable where liquor ferri chloridi, plugging, etc., have been tried without avail. He relates three cases illustrative of its efficacy.

24. *Treatment of Spasmodic Asthma*.—The efficacy of subcutaneous injections of morphia for the relief of spasmodic asthma, pointed out by Dr. Anderson (see No. of this Journal for January last, p. 271), is confirmed by Dr. MCGREGOR BURNS (*Practitioner*, Feb. 1876), and by Dr. G. OLIVER (*Ibid.*). The latter, however, maintains that morphia and atropia combined are superior to morphia alone; the good effect is more speedy and complete, and they produce no depressing gastric disturbance. The frequent use of the injections does not, he asserts, appear to injure the general health, and relief is generally declared in five minutes in the form of comfortable sleep and quiet breathing. The most intense attack has given way in from fifteen to twenty minutes. He uses one-third of a grain of acetate of morphia combined with one-hundredth of a grain of sulphate of atropia.

25. *Treatment of Hooping-cough by Iodide of Silver*.—Dr. ROBERT BELL states (*Obstetrical Journal*, Dec. 1875) that he has treated over one hundred cases of pertussis with iodide of silver, and with uniform success. He gives

about one-eighth of a grain of the medicine three times a day. In almost every case the cough had lost the hoop by the end of four weeks, and was quite well in six weeks.

26. *Use of Saccharated Lime in Typhus Fever and other Complaints.*—Prof. CLEVELAND extols (*The Practitioner*, Dec. 1875) the advantages of saccharate of lime in fevers. "The two points," he says, "most necessary to insist on in the administration of this remedy are probably large doses and copious dilution. A teaspoonful of the pharmacopœial 'liquor,' given after meals, is necessary, in most cases, to develop its effects as a stomachic, and should be diluted in three or four ounces of water; but in cases in which there is foulness of the tongue from acute causes, much the best plan is to fill a tumbler with water, introduce as much of the solution of lime as can be added without giving a very disagreeable taste, and let the patient drink of the mixture *ad libitum*; and when one tumbler is finished let another be filled. Generally, I believe, in most cases in which there is great foulness of the tongue, this treatment will be found most advantageous. It is not suitable, however, when there is inflammation of the stomach, or great irritability indicated, for example, by central redness of the tongue, with sharp ragged edges. Attacks of bilious or gouty diarrhœa and British cholera yield with great rapidity to the free use of saccharated lime, and it is found exceedingly grateful by the patient on account of its alleviating the dry uncomfortable feeling in his mouth. It produces usually copious diuresis, a gentle perspiration, and relief from tormina, while the violence of the action of the bowels is quickly mitigated. There is never, however, the slightest constipation produced, the action of saccharated lime being slightly aperient, and even in some persons markedly so."

In all cases where there is a black, parched, and cracked tongue, like a cinder, with the teeth and limbs black with sordes, he has observed after the free administration of saccharated lime, that the tongue was moist the following day, and in a few days the black crust had entirely loosened and disappeared. In typhus fever it has become Prof. C.'s habit to give the lime in milk instead of water. "Given in this way it has the advantage of preventing that peculiar sensation in the mouth which is liable to follow the drinking of milk, and make it unsuitable for quenching thirst. Thus the patient is induced to take a certain amount of mild nutriment when he is most prostrate. It can scarcely be doubted that to this circumstance, as well as to the improvement in the whole length of the alimentary canal, indicated by the effect on the tongue, the benefits which I have observed to follow the free use of saccharated lime are to be imputed."

27. *Bromohydrate of Quinia in Malarial Fever.*—M. SOULEZ confirms (*Journal de Thérap.*, Dec. 11, 1875) the conclusions of M. Gubler (see No. of this Journal for Jan. last, p. 260) as to the special therapeutic properties of this preparation. From numerous observations he finds that not only has the bromohydrate of quinia succeeded when the sulphate had failed, but also that the former does not produce the quinia intoxication caused by the latter. It also results from the observations of M. S. that the bromohydrate of quinia taken in a suitable dose an hour before an expected paroxysm will prevent its occurrence. Owing to its greater solubility it may be more readily employed hypodermically than the other salts of quinia.—*Gaz. Hebdom.*, Feb. 18, 1876.

28. *Ergot of Rye as an Antipyretic in Enteric Fever.*—M. HAYEM has been making a trial of ergot of rye in cases of enteric fever, with the object of lowering the temperature. The results he has obtained have been very satisfactory, and its employment in this disease seems to him preferable to that of sulphate of quinia or of digitalis. Under the influence of ergot there is a much more rapid defervescence; and at the period of the acme, instead of there being a rise in the temperature chart, a plateau is obtained. In some cases in which the ergot was only given during the day, the evening temperature was not so high as the morning. The dose varied from thirty to fifty grains in the twenty-four hours.—*Dublin Journ. Med. Sci.*, Dec. 1875.

29. *Nélaton's Method in a Chloroform Accident.*—Mr. LAWSON TAIT states (*The Practitioner*, Feb. 1876), that, while performing Amussat's operation on a thin, delicate, and much exhausted patient, he suddenly found that the respiration, carotid pulsation, and heart-beat had ceased. He immediately inverted the patient, and directed his colleagues to imitate respiration by compressing the chest at intervals. The patient after a time revived, and Mr. T. is convinced that he was thus saved from the loss of his patient.

He adds: "Since July I have used nothing but anhydrous sulphuric ether for operations, and though it is far from being so convenient as chloroform or methylene ether, I think we are not justified in using any other anæsthetic, save in cases of young infants and pregnant women, amongst whom no chloroform accident has yet been recorded."

30. *Effects of Artificial Suppression of the Perspiration on the Animal Organism.*—Dr. N. SOKOLOFF remarks it is well known that when an animal is varnished over, so as to stop the perspiration, it speedily dies. The explanation of this occurrence, which obviously suggests itself, is, that some material, which is usually given off in the sweat, is retained and acts as a poison. This was Edenhuizen's theory, and he supposed that the deleterious substance was an amine base. Laschkewitsch, however, has recently stated that all is explainable on the theory of a vaso-motor paralysis, and consequent loss of heat by the animal. He believes that the vessels of the skin are widely dilated, and there is so much radiation of heat as to lower the temperature to a degree incompatible with life. The present author grants that there is a reduction in temperature before death, but finds no such dilation of the vessels of the skin. Besides, when the animal is kept warm, by being wrapped in cotton-wool, its temperature still falls, and death occurs, though more slowly. In his experiments, the author used dogs and rabbits, and generally varnished them with oil, as being less irritating than varnishes which become solid. He finds that both in partial and total varnishing, albumen soon appears in the urine, with epithelium and young cells. The appearance of albumen was always the first phenomenon, and occurred before any functional disturbance was visible. The facts seem to be that there is in the blood some poison which first attacks the kidneys, and produces inflammation there. The blood of an animal which has been treated in this way, when transfused into a healthy animal, produced temporary albuminuria. This is what we should expect, for the supposed poison is in the sound animal diluted by the existing blood, and is not, as in the varnished animal, being continually produced. If these views are correct, then we ought to hesitate to adopt varnishing as a method of treatment in man. Senator has recommended it in order to reduce the temperature in fevers, but it does not seem to be so effective in men as in animals, and, if it is, then its effect on the kidneys is a serious drawback.—*Glasgow Med. Journal*, Jan. 1876, from *Virchow's Archiv*, vol. lxiv. pt. 1.

31. *Transfusion of Blood in the Insane.*—There have been several trials of this made at the asylums in Italy, and Dr. ALFRED VOISIN, in the *Gazette des Hôpitaux* for December 21, gives an account of a case so treated by him at the Salpêtrière.

Chronic insanity in its simple form, he observes, may at last, in consequence of insufficient alimentation, give rise to a kind of slow inanition and a changed condition of the blood, which shows itself by pallor, transparency of the skin and mucous membranes, flaccidity of the muscles, œdema of the extremities unaccompanied by albumen, a special odour of the breath and skin, an appearance of languor, and the production of eschars on the sacrum and elbows. The blood of such patients exhibits changes which consist in a greater paleness when seen issuing from a prick of the finger, and sometimes in the separation of the drop of blood into a clear and coloured portion. Under the microscope the mass of the globules is found separated into islets, surrounded by clear spaces, and without any increase in the number of the white globules.

This secondary morbid condition usually resists all treatment, the patient gradually getting worse until the formation of eschars leads to his death.

After having witnessed such a termination, Dr. Voisin resolved to give a trial to transfusion. The first patient upon whom it was performed was not a fair case, as numerous eschars had already formed, which soon proved fatal; but the second case occurred in a woman forty-one years of age, the subject of profound suicidal melancholia, with indisposition to eat, and whose blood exhibited the appearances above described, and which are a sure sign of the imminence of eschars. By inadvertence, twenty grammes of human blood were injected into the cellular tissue at the bend of the elbow, instead of into the vein, producing a considerable thrombus. This soon subsided, and in a day or two afterwards eighty grammes of blood were thrown into the median vein. The success was remarkable. Even the injection into the cellular tissue led to a diminution of the œdema and obstinate constipation, while after the injection of the eighty grammes, which was borne without inconvenience, these two conditions disappeared at once, while the patient soon recovered her appetite, and, from being indisposed to move at all, was found willing to walk out of doors. Her mental condition was still the same; but her improved health enabled her to take morphia in much-increased doses; and under the use of this she has lost all disposition to suicide, is able to attend to her domestic duties, and has recovered her appetite. Dr. Voisin believes it is only in the direction of its influence on the bodily health, and not as a curative agent in insanity, that good is to be looked for from transfusion.

At a meeting of the Paris Société de Médecine (*Gaz. des. Hôp.*, January 13), Dr. Voisin stated that he had then two patients under treatment by injecting forty-five or fifty grammes of sheep's blood into the cellular tissue at intervals of some days, having been induced to pursue this practice, not only by the advantage which had ensued upon the accidental injection related above, but also by the fact that it had been recommended by several practitioners who had tried it. The cases, at the time of the report, were still under treatment, but decided advantage had followed the procedure, giving reason for hopeful expectations.—*Med. Times and Gaz.*, Jan. 29, 1876.

32. *Auscultation of the Mouth and the Buccal Râle.* By E. GALVAGNI of Bologna.—On placing the ear near the mouth of patients we often hear a fine mucous or crepitat râle. The impression at first is that this râle originates in the larynx, so great is its purity and intensity; and it is often difficult to convince people that it has its source in the finer bronchi or lung substance. But various considerations lead to this conclusion. The râle may be heard in cases where similar râles are to be detected by auscultation; and though the buccal râle is in these cases drier, sharper, and of higher pitch, still the characters of the mouth as a resonance-chamber are sufficient to account for this. Again, these sounds are sometimes inaudible on auscultating the trachea, although loud enough near the mouth. They are also occasionally heard when no râle can be found by ordinary auscultation of the chest. The reason of this may be that, in these cases, the râle originates in the central parts of the lung, and is damped before reaching the chest well, the lung-tissue being a bad conductor—or the râle may at its seat of origin be a very weak one, but reinforced by the resonance-cavities of the mouth and trachea, just as Helmholtz's resonators reinforce tones. The shape of the mouth as a resonator will thus have an important effect on the character of these râles. This is further manifested by the fact that the same râle has a different sound when the person breathes through the mouth or the nose. The author has observed these râles chiefly in cases of phthisis pulmonalis. They are loudest where cavities exist, but may be present in any stage. This sign is of great importance as a diagnostic means in the earliest stages, in which it may be the only sign present. Phthisical patients often refer spontaneously to the peculiar sound which they hear. The author has further observed it in one case of pneumonia, and that a complicated case, but it is generally absent in this disease. It was present in four cases of capillary bronchitis, and one of acute tuberculosis with capillary bronchitis. He found it also in a case of pleuritic exudation, in which the sputum indicated the presence of some affection of the lung, but the exudation prevented its diagnosis.—*Glasgow Med. Journ.*, Jan. 1876, from *Stricker's Medizinische Jahrbücher*, Part 3, 1875.

32. *Morbus Erronum*.—Dr. GREENHOW showed to the Clinical Society of London (Jan. 14) a patient presenting such marked pigmentation of the skin that he had been sent to the Middlesex Hospital as a case of Addison's disease. He was a pauper, about sixty years of age, and doubtless had long been exposed to the influences of dirt and vermin. Most of the regions characteristically affected in Addison's disease were here very deeply pigmented, but some symptoms which might be attributed to constitutional disturbance—*e. g.*, vomiting and breathlessness—were accounted for by cardiac disease. Possibly a few cases erroneously described as Addison's disease, without suprarenal affection, were examples of this kind of pigmentation, which Dr. Greenhow proposed to call "*morbus erronum*," or "vagabond's disease." The discoloration, however, was more mottled and less uniformly distributed than in Addison's disease. Moreover, the face and hands were the least discoloured, and repeated applications of detergent had diminished considerably the depth of tint. The president inquired whether there was any pigmentation of the buccal mucous membrane or of the eyelids. Dr. Greenhow replied that there was faint pigmentation of the buccal membrane, and remarked that this was not peculiar to Addison's disease.

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thigh for a traumatic injury. The second case occurred in a delicate lad, with ankylosis of the hip-joint in a faulty position, with running sinuses, which led to diseased bone.

36. *Fibro-cystic Bronchocele; Operation; Recovery.*—Dr. WOLFRED NELSON records (*Canada Med. Record*, Jan. 1876) an interesting case of this. The subject of it was a single woman, æt. 32, in fair health. The disease was hereditary in her family. The tumour first appeared when at the age of 16, and gradually enlarged till it attained the size of a teacup—at times it caused difficulty of breathing. The tumour was attached to left side of trachea and appeared to involve only the left thyroid gland. The operation was performed on the 24th October, 1874, as follows: "An incision was made five inches long, extending from a point about one inch on the left side of the trachea, on a level with the upper border of the thyroid cartilage, passing somewhat obliquely downwards and inwards to within a short distance of the sternum. On reaching the fascia it was taken up carefully and divided layer by layer, all vessels being tied before severing. No veins of any size were divided. On coming to the last covering, the tumour slipped out freely from its sac, leaving it attached by a base of two inches in diameter; the vessels entering the tumour were carefully dissected out. Extreme care had to be observed at this stage of the operation, owing to the intimate relation of the tumour to the sheath of the carotid. At this point the superior thyroid was ligated. Growth here had extended downwards between the trachea and the sheath, pushing the latter to one side outwardly; the tumour was then completely removed by a few final touches of the knife. Very little blood was lost during the operation, probably not more than three or four ounces. The cavity was then carefully sponged out with carbolic lotion, 1 x 60. It had rather a formidable appearance; the finger was easily passed between the carotid vessels and the trachea. Some time was permitted to elapse to allow for the stoppage of venous oozing, the sides of the wound were then closely brought into apposition and carefully closed by silver sutures. The effect of the chloroform having passed off, she was enjoined to be quiet, cold water dressing was applied. Pulse full and regular. About half an hour after the operation, she vomited some bilious-looking fluid, when blood was observed to be flowing from beneath the dressing. On examination, the cavity of the wound was found to be filled with blood, which was forcibly ejected from beneath the sutures; they were removed and all clots washed out. The bleeding appeared to be due to capillary oozing; it was considered best to religate the superior thyroid. The cavity was then washed out with a solution of ferri perchlor., 1 x 20; this at once checked the bleeding. The wound was allowed to remain open until it became thoroughly glazed, the sides were then brought into apposition, but no sutures were put in, the parts being kept together by means of adhesive straps and pads. At one o'clock she again attempted to vomit, when I held her head to prevent any stretching of the neck. The slightest movement seemed to increase the irritability of the stomach. I kept her in one position until three o'clock, when on slight movement the nausea again returned. By holding her head firmly against the pillow, no bad results followed. At six, when I carried her into another room to her bed, nausea again caused me some anxiety; securing her head as above prevented any stretching of the parts. She was placed safely in bed, but a few drops of blood coming away. The progress of the case was tolerably steady towards recovery, and thirteen months afterwards she was in perfect health.

37. *Pachydermatocoele of the Scalp.*—Dr. WM. STOKES, Prof. of Surgery, Royal College of Surgeons, Ireland, records (*Dublin Journ. Med. Sc.*, Jan. 1876) a case of extensive pachydermatocoele occupying the whole of the posterior portion of the scalp, in a man aged 33, in which he successfully excised the tumour. The hemorrhage which took place during the operation, from the vast number of small vessels which went to nourish the enormous mass, was, he states, fierce and uncontrollable, so much so that the patient appeared dead. "The respiration ceased, the pulse ceased, the face assumed a cadaveric hue,

the eyes became glazed, and he was, to all appearances, dead." By adopting Nélaton's method of resuscitating persons suffering from syncope produced by chloroform, the patient after five or six minutes revived, and the operation was completed. The patient ultimately made a good recovery.

38. *Removal of a Wounded Kidney.*—M. MARVAUD, Surgeon-Major in an Algerian regiment, relates (*Rev. de Méd. Militaire*, October) the case of a young Arab woman who had been severely wounded in the right lumbar region by means of a long knife or yataghan. The instrument, cutting only on one edge, had a thick back, and on withdrawing it the right kidney was also drawn out of the wound, between the lips of which it remained strangulated. There was considerable hemorrhage, but this soon stopped. A silk ligature was passed around the pedicle of the extruded organ, and at the end of some weeks the kidney was separated—the patient continuing in good health the whole time, and the secretion of urine being normal. She was discharged perfectly well two months after admission.—*Canadian Journal of Medical Sciences*, March, 1876.

39. *Liquor Bismuthi given as Enema for Hemorrhoids and Prolapsus Ani.*—Dr. JOHN CLELAND relates (*Practitioner*, Jan. 1876) a case of prolapsus ani in a woman, so extensive that half a yard of bowel was extruded, which he successfully treated by placing the patient in bed, then injecting, after the prolapsus was reduced, a desertspoonful of liquid bismuthi in half a wineglassful of starch, which was directed to be retained. He has since "frequently used the same remedy for the ordinary prolapsus of children, with invariable and rapid success."

"In severe hemorrhoids," he remarks, "there are usually three parts affected, the integument, the mucous membrane, and the hemorrhoidal veins. Plainly the veins cannot be reached by local medicaments, and those comparatively few cases in which they alone are involved must be treated in other ways. The integument, together with the edge of the mucous membrane up to the grasp of the sphincter, is within easy reach, and may be treated in various ways according to circumstances. Thus, when the congestion is superficial and produces a catarrhal oozing, bathing with whiskey or other alcoholic lotion, a small pad of dry cotton-wool firmly applied to soak up the moisture, and also zinc or bismuth in powder or ointment are all exceedingly useful; and when a congested surface within easy reach is accompanied with venous engorgement, tincture of iodine sometimes produces surprising effects, although in other instances it is too painful to be borne. But when the mucous membrane is considerably involved, I know no application to compare with injection of liquor bismuthi, which has the advantage of being painless; and, as in the case of prolapsus narrated above, the improvement of the mucous membrane has a wonderful influence on both the veins and integument. In instances in which the necessity for surgical interference appeared indubitable, I have had the gratification of defrauding myself of the pleasure of operating, and of seeing the patient recover. This is the more gratifying, as the surgical treatment of hemorrhoids labours under the disadvantage, that, no matter what be the particular operation adopted, it never removes the predisposing cause of the malady."

40. *Method of Opening Abscesses without causing Pain.*—Dr. BORGONZINI, of Boulogne, recommends for this purpose the application to the skin, for from three to five minutes, of a solution of two parts of carbolic acid in one part of glycerine. If the skin is inflamed, as it usually is in acute abscesses, the anæsthesia should not be too long applied. Dr. B. thinks that this anæsthetic may be utilized in autoplasmic operations, and for superficial neuralgias.—*La Tribune Médicale*, 26 Dec. 1875

[Dr. Bill four years ago demonstrated the anæsthetic properties of carbolic acid locally applied, in his elaborate and interesting article published in the No. of this Journal for July, 1872, p. 35.—Ed.]

OPHTHALMOLOGY.

41. *New Operation for Cataract.*—Dr. CHARLES BELL TAYLOR introduced to the Clinical Society (Jan. 28th) patients who had undergone double extraction for cataract, by a method which he had adopted in favourable cases since 1865. The lens, he said, was removed through a small flap, the base of which occupied a position about midway between the horizontal diameter of the cornea and the corneo-sclerotic junction. The wound healed readily. There was no subsequent astigmatism; and, as there was no trace of the operation a few weeks after its performance, the lower section, on account of its greater convenience, was selected. The patients introduced, who were stated to be average examples of successful cases treated in this way, had central and movable pupils; and all trace of the operation was so completely effaced that it was impossible to say whether the flap had been made upwards or downwards, or that the patient had undergone any operation. Dr. Taylor stated that the highest amount of usual acuity obtainable after extraction was secured in this way, some of the patients declaring that they saw as well as ever in their lives before.

Mr. Macnamara said the results of the operation were splendid in the two cases which were exhibited. He thought that excision of the iris was generally uncalled for in the extraction of cataract: certainly in those cases where atropine dilated the pupil. Firstly, if the atropine were applied beforehand, the pupil remained dilated at the time of operation; and secondly, the mere dilatation of the pupil showed that the parts were healthy. But if atropine did not affect the pupil, then iridectomy was of importance. He thought the section in Dr. Taylor's cases was as perfect as could be. With regard to the extraction of cataract, he removed the lens in its capsule, where possible, as being the best way of giving the patient a chance of healthy sight.

Mr. Spencer Watson had had some experience of operating in a manner very similar to the plan advocated by Dr. Bell Taylor; but he had endeavoured to carry the knife upwards and forwards, so as to make the incision vertical through the corneal layers. The incision need not then be so long, and the edges of the wound, as he thought, fell together better. If atropine dilated the pupil, the cataract could generally be removed through a small corneal incision. If there were adhesions, it was desirable to take away a piece of iris. If the lens were fluid, and its cortex tough, it was easy to remove the capsule with the lens; but, in the generality of cases, it was difficult to do so without rupture of the hyaloid membrane, escape of the vitreous, and protrusion of the iris. He congratulated Dr. Bell Taylor upon the results in his cases. He had examined them carefully, and could detect no trace of the operation upon the cornea, except by means of a magnifying lens.—*Med. Times and Gazette*, Feb. 12, 1876.

42. *Trephining the Sclerotic in Glaucoma.*—Dr. ARGYLL ROBERTSON, in a paper read before the Medico-Chirurgical Society of Edinburgh (Jan. 5), stated that ophthalmic surgeons at the present day generally agreed in attributing the symptoms present in most cases of glaucoma to an increase in the intra-ocular pressure. All measures therefore that have been advocated as serviceable in glaucoma have for their object a reduction of the increased intra-ocular tension. The chief of these were—paracentesis of the cornea, division of the ciliary muscle or intra-ocular myotomy, and iridectomy.

Paracentesis of the cornea, while undoubtedly capable of alleviating the symptoms, produced only temporary benefit. Division of the ciliary muscle, or intra-ocular myotomy, had fallen much into disuse, partly, he believed, owing to the temporary character of the benefit following it, and partly from the liability of all wounds in the ciliary region to be followed by chronic insidious inflammation leading to loss of vision, and even to sympathetic affection of the other eye. Iridectomy was the prevailing remedy for all glaucomatous affections. While this operation, he willingly admitted, effected brilliant results in

many cases, reducing permanently the intra-ocular pressure, and saving sight, there were exceptional cases, in which the removal of a portion of iris could not be satisfactorily effected, and others in which the operation failed to afford relief. Dr. Robertson was thus led to devise an operation which might prove serviceable in such cases. The operation consisted in trephining the sclerotic, thus making a circular aperture into the chamber of the vitreous humour about $\frac{1}{16}$ of an inch in diameter. The escape of some of the contents of the eye at once served to reduce the tension, while the author believed that this effect was probably permanent, as the circular opening in the sclerotic must be filled up by new tissue having less resisting power than the original membrane, and would thus readily yield to pressure from within, acting the part of a safety-valve, should at any future time the contents of the vitreous chamber be increased in amount.

Four cases had been subjected to the operation, and in all the trephining had been effected by means of Mr. Bowman's cornea trephine, but this instrument did not penetrate the tough sclerotic so readily as might be desired, and did not give a firm hold to the fingers in the rotatory movements necessary for trephining; so Dr. Robertson had got an instrument constructed to obviate these disadvantages, which he exhibited to the Society. In all the cases, the aperture was made through the upper part of the sclerotic, as the eye during the trephining could be pressed against the unyielding inferior orbital plate; the point chosen was about two lines from the margin of the cornea, corresponding to the junction of the ciliary processes with the choroid. The four cases were given in detail.

In commenting on these cases, Dr. Robertson said that the result in the *first* case exceeded his expectations, as, in addition to the subsidence of the staphyloma, the tension, which was previously excessive, remained permanently diminished, and vision was slightly improved. The sympathetic irritation of the other eye, which eventually induced him to enucleate the trephined eye, he attributed to the diseased state of the eye, and not to the trephining.

In the *second* case, where the increased tension was due to an intra-ocular growth, and where iridectomy failed to afford relief, the trephining was of decided benefit, ridding the patient of pain and diminishing the intra-ocular pressure, which the author considered irresistible proof of the efficacy of the operation.

In the *third* case, the operation effected all that was desired—causing diminished tension and relieving pain.

In the *fourth* case, he considered that the trephining in the one eye had been relatively quite as successful in its results as the iridectomy in the other.

As the result of his experience, Dr. Robertson expressed his conviction that, in this operation, we possess an effectual means of reducing increased intra-ocular tension, and that in most cases it will be found effectual in preventing a return of increased tension, or at any rate in warding off the evil consequences of that condition.—*Edinburgh Med. Journal*, Feb. 1876.

43. *Daturine as a Mydriatic.*—The results of numerous cases collected by Dr. FANO, and communicated to the *Journal d'Oculistique et de Chirurgie* for August and September, are as follows: 1. With a solution of daturine (1 part in 3000) dilatation of the pupil of a healthy eye is obtained in from twenty to twenty-five minutes. 2. The action of daturine is as prompt as that of atropine; the two solutions employed being of equal strength. 3. The instillation of a daturine collyrium (1 in 600) produces dilatation of the pupil at the end of twenty-five minutes, and in young subjects in a shorter space of time. 4. The instillation of an atropine collyrium produces mydriatic effects rather more promptly than the instillation of a daturine collyrium. 5. If, in vasculo-plastic keratitis, accompanied by a non-dilatable state of the pupil, daturine be inefficacious in bringing on this dilatation, the atropine also remains ineffective. 6. But in these same kinds of keratitis, daturine sometimes produced dilatation of the pupil, when atropine has not exercised any action of the kind. 7. If the daturine collyrium do not produce dilatation of the pupil in certain cases of vasculo-plastic keratitis, in which the mydriatic effect of the atropine is also not more appreciable, the daturine seems to exercise a special action over the

vessels of the cornea, which diminish in size under the influence of the alkaloid of datura stramonium. 8. The daturine collyrium therefore appears superior to atropine in certain cases of chronic and vasculo-plastic keratitis.—*London Med. Record*, Dec. 15, 1875.

44. *Eserine in Asthenopia and Senile Presbyopia*.—Prof. GUBLER stated, at the Société de Thérapeutique, that the disturbances of vision which succeed acute and sometimes chronic diseases, and which are due to consecutive paralysis, characterized by asthenopia and debility of the muscles of the eye, may be effectually treated by the Calabar bean. To remedy this condition of asthenopia (difficulty of accommodation, with vague perception of the images produced by near objects, and dilatation of the pupil), a few drops of a solution of sulphate of eserine (ଅଢ଼ଥ to ଅଢ଼ଥ) should be put into the eye, and in an hour or two the vision is rendered quite distinct. For the first fifteen or twenty minutes the pupil is rendered narrow or punctiform, and the vision is more troubled in the eye so treated than in the other. But the pupil then redilates until it reaches the medium size, and vision becomes very distinct. Prof. Gubler has also applied the eserine in presbyopia, for although this is a normal consequence of the progress of years, it seems in a great number of instances to be increased by starts; and in such cases eserine is of great service. It is an excellent means for at least diminishing the rapidity of the advance of presbyopia.—*Med. Times and Gazette*, Feb. 12, from *Gaz. Hebdom.*, Feb. 4, 1876.

45. *Faulty Perception of Colours after Injuries to the Head*.—Several writers of repute, and amongst them Desmarres, have placed cases upon record, in which Daltonism had followed severe injuries to the head. Dr. A. FAVRE has searched the records of these and of similar cases, and has published the result (*Lyon Médical*, July 25, 1875). The occurrence of this faulty perception of colours after blows upon the head, either with or without a wound, and especially after contused wounds in the neighbourhood of the eye, is thus placed beyond doubt; but it is by no means constant, and Dr. Favre is not in a position to say positively that it is more frequent after an injury of a particular kind, or that it is always associated with injury of any one special region. The ophthalmoscope has not as yet revealed any appreciable lesion within the eye; and in those instances in which the phenomena have been noticed before the patient's death in consequence of injury, no information has been gained from the *post-mortem* appearances.

In the majority of cases, the defect of vision has been transient; but in one or two it has lasted for some weeks; in one instance of which Dr. Favre writes, the defect was first noticed when some weeks had passed since the injury. In no case yet on record has the defect been noticed as a permanent condition.

It is interesting to note the particular error which such patients commit. For the most part the complementary colour is seen by the patient; thus red has appeared to be blue, and blue red, to a man who had received a contused wound of the upper eyelid; and another patient who had received a sharp blow upon the eyeball with the finger, saw everything which was red as though it were green. In several instances the neighbouring colour has been seen; thus blue has appeared to be green, and green has appeared to be yellow.

Such facts as these are of great importance to all who from their occupation have to do with coloured light; this is especially the case with sailors and with railway employes, who are also very often exposed to the risk of injury. There are various branches of work in which an exact appreciation of colours is of great importance; one of these mentioned by Dr. Favre is the process of making the kind of steel known as Bessemer steel; during this process the workman has to watch very closely the play of colours which takes place in the metal under operation, while it is obvious that he himself is running no little risk.—*London Med. Record*, Dec. 15, 1875.

MIDWIFERY AND GYNÆCOLOGY.

46. *Extensive Laceration of the Perineum; Cure.*—Dr. JAS. YORNG, Vice President of the Obstetrical Society of Edinburgh, relates the following interesting cases of this accident:—

"On the 2nd of June, 1875, I was summoned to see Mrs. M., æt. 35, a primipara. At 6 P. M. the os uteri was small (size of a shilling), although the patient had been in labour for twelve hours. I was again called at 6 P. M. next day, when I found the first stage almost over, and the head presenting in the occipito-anterior position. The woman had been twenty-four hours in labour, and as I considered it unjustifiable to leave her longer, I sent for the forceps. The vagina was hot, and the pains were becoming feeble. While under chloroform, I used steady traction during each pain, allowing the external parts time to dilate slowly. Notwithstanding every care, the perineum ruptured right along through the sphincter ani, and into bowel three inches, my whole index finger easily passing from bowel into vagina. When the placenta was expelled, and the uterus contracted, the wound was carefully sponged. The anaesthesia being maintained, the torn parts were brought together with the interrupted suture. Seven ligatures were used, which had been dipped in carbolic oil, and the wound was left in perfect approximation. The urine was drawn off every twelve hours. The thighs were tied together, and by the administration of opium, the bowels were confined for six days. No local dressings were used. The patient made a perfect recovery; the wound healed throughout at every point; and on the fourteenth day she was left to her own care. Several weeks ago, I examined the patient by placing one index finger in the bowel, and the other in the vagina, and found the recto-vaginal septum complete. Let me here mention, in connection with her history, that when Mrs. M. was married, I understood that perfect sexual intercourse was precluded for some months in consequence of the extreme rigidity of the vagina, and four years elapsed ere this child was born."

Dr. Y. says that in severe perineal rupture the immediate closing of the wound is of paramount importance, so as to secure healing by the first intention. The interrupted suture of carbolized catgut should be used; and the entire rupture must be brought into exact approximation. Careful and frequent sponging must be attended to by the nurse, to avoid any irritation from the lochial discharge. The urine must be drawn off every twelve hours; no dressings applied; the patient kept in the horizontal position; the thighs kept together; and the bowels must not be allowed to move for six days.—*Edinburgh Med. Journal*, Jan. 1876.

47. *Cæsarean Section.*—Mr. JOHN PARKS records (*Lancet*, Feb. 12, 1876) the case of a woman in labour with contracted pelvis, in which he performed Cæsarean section with success to the mother.

48. *Sudden Death after Uterine Injection of Chloride of Iron.*—The following case was reported by Dr. CEDERSKIÖLD before the Swedish Medical Society. The patient was pregnant for the second time. A considerable hemorrhage followed the birth of the child, the uterus did not contract fully, and the fundus could be felt over the pubes. Ergot was of little use, and the hemorrhage recurred from time to time. Eighteen days later, a strong solution of the perchloride of iron (1 to 7) was injected into the uterus. Every precaution was taken; the syringe was freed from air; the pressure on the piston was gradual, etc.; but, when the injection was half completed, the woman suddenly complained of pain in the breast, stretched backward, drew a few short breaths, and was dead. A *post-mortem* examination was made the next day. The small intestines were actively congested; a few spoonfuls of thin, blackish fluid were found in the fossa of Douglas, and on the peritoneum in that vicinity there were numerous black spots. The uterus was pretty firmly contracted. The interior of the uterus and vagina was stained dark brown. The interior

of the uterus was uneven and covered with a reddish granulation-tissue, with the exception of the sides and fundus, where three superficial oval ulcerated surfaces were found, each $1\frac{1}{2}$ to 2 inches long. Here the uterine substance was exposed, and had a ragged surface, in the centre of which there were leaf-like, somewhat firm structures, 0.4 inch high and 1.2 inches long. These were intimately united with the underlying tissues, and consisted of organic muscular fibres. At the sides of these formations, there were open-mouthed vessels, some of them large enough to admit a fine sound, which passed into the larger veins of the uterus. These were slit up and followed into the hypogastric and iliac veins and the vena cava inferior. The blood in these veins was found markedly coagulated and stained brown. Bubbles of air were also found in them. The same condition was found in the right side of the heart. The lungs and other organs presented nothing abnormal.—*British Med. Journal*, Jan. 1, 1876, from *Hygiea*, Aug. 1875.

49. *Fibroid of Uterus; Gastrotomy*.—Dr. ROUTH communicated to the Obstetrical Society of London (Jan. 5) the particulars of a case of extra-uterine fibroid of large size, removed successfully by gastrotomy from a patient aged 32. The tumour weighed over seventeen pounds. Five days after the operation, the temperature rose to 105° F. in the axilla, the vaginal temperature being 106.4° . She was then placed bodily in an ice-water bath, and kept in for three-quarters of an hour. Consciousness returned, and the temperature sank to 100° , the axillary temperature a quarter of an hour later being 97° . A week subsequently, the temperature having again risen to 104° , the ice-water bath was repeated, which reduced the temperature to 99° . Eighteen days after the operation, about five ounces of intensely fetid, grumous, bloody pus were removed with the aspirator per vaginam, and the cavity was washed out with weak iodine. The pulse fell from 112° to 86° the same day, and the temperature in the vagina from 104.2° to 102.4° , it being 99.7° in the axilla. The abscess was subsequently opened per rectum, and a drainage-tube kept in. After rather a protracted illness, the patient recovered perfectly.

Dr. ROGERS, who had assisted at the operation and during the subsequent treatment of the case, remarked upon the after-treatment being most successful, and thought great credit was due to Dr. Routh for his management of the case throughout.

Dr. BARNES regarded the specimen as one of a fibroid tumour springing from the uterus. In many instances such tumours retained a close union with the uterus. In some cases they seemed to be of ovarian origin, and it was a question whether they could be regarded as uterine.

The PRESIDENT said that Dr. Routh's case was remarkable in more than one aspect, and he trusted that so interesting a communication would not be allowed to pass without full discussion. The points he thought of special practical importance were—the success of the treatment, when the temperature was high and the symptoms threatening, by the ice-bath; and the obvious abatement of septicæmic symptoms when irritating fluid was tapped from the peritoneal cavity through the rectum.—*Med. Times and Gaz.*, Jan 22, 1876.

50. *Ovulation without Menstruation*.—Dr. J. H. L. ST. GERMAIN records (*L'Union Médicale du Canada*, Dec. 1875) a case of this. The subject of it was married at the age of 20 years, a few days after her menstrual period; became pregnant soon afterwards, and has had 11 children, her last when 45 years old. During all the period (25 years) since her marriage, she has never menstruated, has nursed her children never less than two years, and some of them for four years, has never miscarried, and lost but little blood during delivery. She is poor, has worked hard, is well developed, has never had much sexual appetite. She is now 78 years old, alert, and cheerful.

51. *Milk Regimen in Puerperal Albuminuria and as a Preventative of Eclampsia*.—M. TARNIER thinks that the benefits which milk may render to therapeutics both as food and medicine are not sufficiently appreciated. The advantage derived from a milk diet in Bright's disease first suggested to him

that it might be also efficacious in the albuminuria of pregnancy; and for some years past he has employed it at the Maternité for any of the pregnant women whose urine furnished albumen. The results he has obtained are remarkably similar and very satisfactory, the albuminuria (except in one case, a subject of advanced Bright's disease) always having rapidly diminished or disappeared before delivery. On the first day he gives one litre of milk (one pint and three-quarters imperial) and two portions of food, two litres and one portion of food on the second day, three litres and one-half a portion of food on the third day, and on the fourth and following days four litres without any other food or drink. In severe cases, and especially if any threatenings of eclampsia have been observed, the patients are at once put on three or four litres per diem. The influence of this regimen has never been long in manifesting itself, and in a week or fortnight after it has been commenced there is found to be a very notable diminution, or even a disappearance of the albuminuria.

"The possible cure of albuminuria during pregnancy gives me reason to hope that in a good number of cases we may prevent eclampsia by the same means. In fact, it is admitted by most accoucheurs that eclampsia is rarely observed except in women the subjects of albuminuria. According to my personal observations, I have found that in the subjects of albuminuria the eclampsia very often occurs before the commencement of labour, this not taking place until after the appearance of the convulsions—but so near to them that the practitioner who is called in in all haste witnesses at the same time the signs of eclampsia and the phenomena of labour. Thus is explained how the opinion, so much to be regretted, has gained ground, that the convulsions are habitually engendered by the pains of labour, while in reality the labour most commonly appears only after the commencement of the convulsive attack. Sometimes, it is true, the eclampsia only comes on during the middle of the labour; but here again it has been preceded by albuminuria,—and this is a point I insist upon. It will be objected to me that cases of eclampsia occur without albuminuria; and I know that there are such, but these are of extreme rarity. Almost always the cause of the eclampsia is to be found in the modifications of the economy produced by a pre-existing albuminuria, and this latter affection must have lasted for some time. If it is possible to cure the albuminuria of pregnancy, we have also the means of preventing eclampsia. My cases are not in a considerable enough number to allow me to draw a positive conclusion, and I must content myself with stating what I have seen. In the patients I have submitted to the lacteal regimen the albuminuria has diminished rapidly or disappeared, and in these eclampsia has never occurred. Will it be the same whenever this regimen is resorted to in time? or will the failures prove considerable? This it is impossible to know without a greater number of cases than I shall alone be able to record. Actually I attribute the success which I have obtained to the lacteal regimen having been applied in *opportune time*. Albuminuria approaches in a very insidious manner, and sometimes is revealed by no sign unless the urine be examined in spite of all the appearances of most perfect health. Therefore all pregnant women in my service, whether they exhibit infiltrations or not, are examined with relation to albuminuria, their urine being often analyzed. As soon as albumen is found to be present, the milk regimen is at once put into force, and continued until the albumen disappears. We must not allow ourselves to be surprised by eclampsia, for it is then too late. The facts which I now publish are not sufficiently decisive for all doubt to have been removed from my mind, but they appear to me to be of sufficient interest to endeavour to engage others to make similar observations."—*Med. Times and Gaz.*, Jun. 22, *La Tribune Médicale*, Jan. 9, *Le Progrès Médicale*, Dec. 11, 1875.

AMERICAN INTELLIGENCE.

ORIGINAL COMMUNICATIONS.

Case of Purpura Hemorrhagica treated by Ergotine Hypodermically.
By ENOCH W. KING, M.D., of Galena, Ind.

I was called Aug. 24th at 11 A. M. to Miss A. H., aged 17. She was walking about the room with a basin of cold water attempting to arrest epistaxis, which had continued since 7 o'clock that morning. Her previous health had been excellent, and during last week she had been as well as usual, except a headache every afternoon.

On the afternoon of the 20th, after quite a hard day's work at general housework, her nose commenced to bleed from right nostril, and bled freely for one-half hour, when it ceased. That evening she went to camp meeting, and remained at her father's tent until the 23d, during which time the weather was quite cool and damp for August.

On the 21st, in the morning, noticed some small red spots on chest, and quite a number on her ankles. All day she felt weak, but otherwise well. That afternoon her nose bled more freely than on the previous evening, but the hemorrhage was arrested without much trouble. The next afternoon the bleeding was more profuse, but by ice and quietude it again ceased after one or two hours' duration.

On the 23d there was no bleeding, and she worked quite hard in returning home from the camp. On the 24th, the epistaxis commenced about 7 o'clock in the morning, and had not ceased when I saw her at 11 o'clock A. M. I immediately plugged the nostril with cotton saturated with tinct. chlor. ferri, made her go to bed and keep quiet; the bleeding immediately ceased; I then examined the spots more carefully. On the front of chest there were, perhaps, a dozen purple spots the size of a grain of flaxseed or smaller, presenting the appearance of what is termed a "blood blister," except they were not elevated above the surrounding skin; on the back there were about the same number, on the lower extremities from knee to foot they were quite thick, but separate and distinct from each other, and about the size of those on the chest, except one ecchymosis about $2\frac{1}{2}$ inches in diameter on anterior tibial region. Pulse 80, and strong. Temperature 98° in axilla. No abnormal sounds about heart; lungs clear; appetite good; slept well last night; bowels and menses regular. In fact, feels well except the weakness from loss of blood. Her last period, three weeks ago, was attended with a little pain, but she did not observe any difference in character or quantity of the flow. I prescribed five grains gallic acid every hour, cold applications to forehead, and perfect quietude, and the other nostril to be plugged if necessary in my absence.

At 3 P. M., after rising up in bed, the blood commenced flowing freely from left nostril, but it did not continue over one-half hour, as it was plugged quite effectually. 7 P. M., she was resting well, suffering no pain except a light headache, did not wish any supper. I ordered the acid every two

hours, other treatment as before, and that I should be sent for if bleeding commenced again. At 10 o'clock that night she attempted to get up to urinate, when her nose commenced bleeding from both nostrils, and she soon fainted. When rallied she vomited one-half gallon of clotted blood. In the mean time I had arrived and inserted my cotton plugs still closer to the posterior nares, this time using Monsel's solution; the hemorrhage finally ceased to some extent, but not entirely. She occasionally spit out some blood, which I satisfied myself came from the posterior nares.

I then prepared some ergotine, 5 grains to the drachm of equal parts of glycerin and water for hypodermic use. My hypodermic syringe holding only 15 minims, I could not inject as large a dose as I intended, but at 12.30 I used $1\frac{1}{4}$ gr. near insertion of deltoid. During my absence she was still bleeding, and the blood being swallowed, immediately after the injection she vomited about 6 oz. clotted blood. After this she rested quite well, and did not think she was bleeding any more, but in half an hour vomited about 16 oz. more blood. She rested quite well then for over two hours, when she passed about a pint of feces and clotted blood from the bowels. About the time of the severe hemorrhage a number of vibices and large ecchymoses appeared on arms and legs, but none on body.

About 5 A. M. on 23d, Dr. E. P. Easley, of New Albany, saw the case and approved of my course. At his suggestion, I used another $1\frac{1}{4}$ gr. of ergotine hypodermically. Patient rested well till at 8 A. M., when she bled for about an hour. On my arrival, I injected another $1\frac{1}{4}$ grain ergotine, and placed more of the styptic in the nares. The hemorrhage ceased, but not so quickly as before, and not until she had vomited about 12 oz. of blood.

I then increased the ergotine to 20 grains to the fl. ℥, and at 1 o'clock, about two hours after the hemorrhage ceased, I injected five grains into the thigh. 6 P. M. Resting well; no hemorrhage or fresh eruption; pulse moderately strong at from 100 to 120; skin cool; slight flush on each side of nose; has been taking 10 m of tinct. ferri chlor. and 1 gr. quinia every three hours. To-day, has taken plenty of nourishment, but has not been raised in bed; bowels moved, but no blood was passed.

26th. At 9 A. M. Dr. John Sloan saw the case, and approved the course pursued. Continued the iron and quinia every six hours, and gave her digitalis and ergot every six hours alternately. During the afternoon bled about a teaspoonful from gums, but stopped spontaneously. Drs. Davis and Kay, of Greenville, hearing of the case, called; we thought it would be the safest plan to give another hypodermic of five grains, which was done.

28th. Her menses appeared and ran their usual course. The purpura gradually disappeared, and she improved slowly under quinia and iron and bark and iron.

She is now (Jan. 21, 1876) as well as usual. Menses regular, and not more profuse than before her attack; has not had any hemorrhages.

Esmarch's Method Simplified. By DAVID LITTLE, M.D., of Rochester, New York.

A few weeks since I was asked to help Dr. Azel Backus, of this city (Rochester, N. Y.), in an operation for the removal of a sequestrum from the os brachii of a stout man in middle life.

When about to apply Esmarch's elastic bandage, it was found to be too short for the purpose. We resorted then to a common muslin roller,

which was applied from finger tips to shoulder as tightly as possible; the elastic tubing being then tied above, the bandage was removed and the operation proceeded with.

It was absolutely bloodless! This is more than I can say of most operations witnessed by me after the application of the elastic bandage.

Happening to mention this to Drs. Montgomery and Langworthy (surgeons to the City Hospital), I was informed that Dr. M. had already, on one occasion, used the muslin bandage, and with perfect success. Dr. L. remarked that "it seemed to him preferable to the elastic bandage."

Provided an ordinary bandage is tightly and evenly applied, it would seem to have the preference as being more likely to force out and keep out the blood from the compressed limb, simply because it is non-elastic and unyielding. If this be so, then the use of the elastic bandage may be discarded, for the common roller is always at hand, and easily applied.

Brief Notes of two Cases of Ascites treated with Strychnia. By THOS. J. McKIE, M.D., of Woodlawn, South Carolina.

A number of years ago a negro woman with ascites, who had been repeatedly tapped by another physician, came under observation. The tapping was continued with considerable regularity every two weeks until the patient from some cause became hemiplegic. For this strychnia in increasing doses was prescribed, and persisted in until she recovered the use of her leg, the arm ever remaining useless. Under this treatment the dropsy disappeared and never returned, although the woman lived several years after.

In February, 1872, was called to a mulatto woman in whom abdominal dropsy had been suddenly developed, and to such a degree as to require the use of the trocar early in the disease.

After practising this mode of relief with considerable regularity, at intervals of about twelve to fourteen days, for a period of six months, strychnia was then given regularly three times a day for about seven weeks, and soon after, tapping once a month was found sufficient.

The use of the strychnia was from some cause then abandoned, and the tapping resorted to every month as usual. Two years ago she again began the use of this drug in increasing doses as before, and continued it as the system would tolerate, about twelve weeks. At this writing (Feb. 4, 1876) eleven months have elapsed since the last tapping, and she reports that the belly is not larger than it was before she was first attacked.

Whether these two cases are mere coincidents, or the effect of strychnia, it is not attempted to decide, and the facts are mentioned that others who are inclined to do so may give it further trial.

DOMESTIC SUMMARY.

Chronic Dysentery cured by Topical Treatment.—Dr. T. GAILLARD THOMAS relates (*N. Y. Med. Journ.*, Jan. 1876) a case of chronic dysentery of five years' standing, in a lady, cured within five weeks by topical treatment. Knowing the reputation of the practitioners under whom the patient had been, Dr. T. says his only hope of effecting a cure lay in local treatment. The patient being etherized, Dr. T. proceeded to make a thorough examination of the rectum. "She was placed in the left lateral position. As the etherization had disturbed the patient's stomach and rendered her nervous, no application

was then made; but eleven days subsequently the patient was again etherized and the bowel being thoroughly cleansed Dr. T. wrapped a small piece of wet cotton around the end of a whalebone rod, and, dipping it in pure commercial nitric acid, lightly touched the swollen mucous membrane and all the ulcers intervening between the sigmoid flexure and the anus. No superfluous fluid was allowed to attach itself to the cotton, and the cauterization was nowhere so decidedly practised as to render the occurrence of sloughing possible.

"Upon recovery from the anæsthetic, a slight amount of pain only was complained of, and writing of the subsequent effect the patient says: 'It soothed me, and I slept well. This was the first real respite which I had experienced in five years.'

"At this time the patient was confined to the milk-diet as much as possible, and limited as to exercise. The application proved of decided benefit in diminishing the number of evacuations, the amount of blood passed, and the pain. Two weeks afterwards a second application was made, which proved still more beneficial. Five days afterwards the third and last application was made. The appearance of the bowel had greatly improved. The ulcers had almost entirely disappeared; the mucous membrane was much less swollen; and the appearance of the engorgement much modified. After this application the milk diet was strictly adhered to, and the patient for ten days confined to bed. Blood ceased to pass with the evacuations; these in three days became limited to one in twenty-four hours; all pain ceased; and the patient rapidly improved in general appearance, in flesh, and in spirits. From this time the patient rapidly recovered, began to eat meat in small quantities, and rode out every day. The patient soon after returned home, and had continued well."

Dr. Thomas states that this plan of treatment was based upon an article by his former pupil, Dr. R. B. Maury, of Memphis, who published in 1872, in the *Atlanta Journal*, eight cases of chronic dysentery treated by topical means alone, of which seven were cured. The application made was nitrate of silver, varying in strength from a solid stick to that of a solution of one drachm to the ounce.

Dr. Thomas prefers nitric acid to nitrate of silver, as he considers it a less painful, more effectual, and equally manageable caustic.

In the March No. of *New York Med. Journal* Dr. Maury relates four cases successfully treated by himself, and one by Dr. Ess upon the same plan.

Dr. Maury concludes with the following suggestions:—

"Proceed deliberately and carefully, as in any other surgical procedure. Always etherize the patient, and always stretch the sphincter ani. When properly done, these are both perfectly safe measures. The patient being etherized, the operator is enabled to explore the rectum and make his applications deliberately and thoroughly. Paralyzing the sphincter is not only necessary to complete any satisfactory exploration, but the quieting influence secured thereby to the rectum can hardly be over estimated. Put the patient in Sims's position for uterine examinations, and use Sims's vaginal speculum for examining the anterior and lateral walls of the rectum, and the bivalve with hinges on one side for examining the posterior wall.

"If much disease is discovered on examination, I would follow Dr. Thomas's example, and use the nitric acid. If ulceration is superficial, and the mucous membrane not much hypertrophied, the nitrate of silver does well. The patient should be required to remain in bed for a week or two when the treatment has been entered upon, and restricting him to a milk and meat diet expedites the cure."

[The value of the application of nitrate of silver to ulcers of the rectum and of injections of a solution of the same salt in dysentery, are well known; but the mode of application pursued by Drs. Thomas and Maury of the above-mentioned salt and of nitric acid for the cure of dysentery, we believe to be original.]

Exstrophy of the Bladder.—Dr. HENRY J. BIGELOW relates (*Boston Med and Surg. Journ.*, Jan 6th) three cases of this upon which he has operated, in one of them by a new operation. This consists in removing the exposed mucous membrane of the bladder, so that flaps drawn from the adjacent skin may ad-

here directly to its raw surface. In the case which he relates the mucous membrane was removed down to the ureters. Flaps drawn from the sides were united upon the median line, and transversely above it. Sixteen silver sutures were introduced, and a piece of adhesive plaster was placed over the whole, to keep the parts immovable. Union was solid in about ten weeks.

Thoracic Aneurism treated by Electrolysis.—Dr. HENRY I. BOWDITCH reports (*Boston Med. and Surg. Journ.*, Jan. 20, 1876) the case of an engineer aged 40, who consulted him for symptoms which were recognized as those of aortic aneurism, and in which the electrolytic treatment was tried. Although the tumour became harder after both operations, and lost a good deal of its impulse, and although in some respects the patient was relieved, as, for example, of his inability to lie save on one side, there was no real improvement, and death occurred sixty days after the first operation.

Dr Bigelow gives the following tabular statement of the cases thus treated which he has been able readily to find.

Date.	Name.	Number of cases.	Results (unknown in 13 cases).		
			Cure.	Death.	Relief.
1846-70.	Ciniselli. ¹	23	6		
	do. (in Althaus.) ²	2	1	1, after four mos., suddenly.	Great relief in the interval.
1866.	Duncan. ³	1		1, on eighth day.	
1867.	Duncan and Frazer. ¹	1		1, not delayed.	
1873.	Bastian. ⁵	1		1, on twenty-first day.	
1873.	Althaus. ²	3		1.	2.
	do. (Arteria innominata).	1		1, in a few days.	
1874.	Anderson. ⁶	1		1, in 13 mos.	Prolonged relief. Mitigated and relieved.
1870.	De Cristophoris. ⁷	3		1, late.	
				1, in 2 days.	Great relief.
1872.	H. I. B.	1		1, in 11 days.	Great relief.
				1.	Relief to certain symptoms.
		37	7	11	6

A little less than one-third die soon. A little more than one-third are either cured or relieved. Less than one-fifth are cured, and even these have relapses.

Dr. Bowditch holds the following principles in regard to the operation to be correct.

(1) In any case in which treatment such as Valsalva's, as modified by Tuffnell, or still further as suggested by myself,⁸ and in which there can be no

¹ Sugli aneurismi dell' aorta toracica. Milano, 1870; New York Medical Journal, December, 1871.

² Medical electricity.

³ Edinburgh Medical and Surgical Journal, April, 1866, page 920.

⁴ Ibid., August, 1867, page 101.

⁵ The Lancet, November, 1873, p. 594.

⁶ Ibid., June 20, 1874.

⁷ Edinburgh Medical and Surgical Journal, June, 1870, page 537.

⁸ Proceedings of the Boston Society for Medical Observation, February, 1866, and subsequently published in the Boston Medical and Surgical Journal.

doubt from the physical exploration of the chest that aneurism of the arch of the aorta exists; if, moreover, we find that the lungs are not very much involved, if we have made up our minds that the case tends certainly to death, perhaps attended with severe suffering—in such a case there can be no doubt that we should be justified in advising electro-puncture, for relief at least, and with the hope of a cure if the aneurism be small.

(2) As to how it should be done, whether by applying to the needles the positive pole or the negative, or both, or one and the other alternately, I think no decision can be made further than this: the positive pole causes a firmer clot, and disengages less gas than the negative. It was used in our case. A great diversity of opinion exists as to these questions, which cannot be settled till we get further facts.

(3) A mild current should be used at first, and continued for some time. I have questioned whether in our case we did not too rapidly increase the number of cells, and whether it were not on that account that our patient had the peculiar symptoms.

(4) Absolute rest before and after the operation, if possible in a perfectly horizontal posture, should be maintained for months, according to the principles laid down by Tuffnell, although I would allow a little more food than he does.

(5) In regard to drugs, I should be governed by circumstances; gentle laxatives are admissible; perhaps digitalis, if the pulse be too rapid. Iodide of potassium might be tried; also cold or compression; if need be, leeches might be applied.

Pathology of Tetanus.—Dr. H. M. BANNISTER, in an interesting article (*Journal of Mental and Nervous Diseases*, Jan. 1876), offers, and cites in its support facts and authorities, a theory of the pathology of tetanus which, though not new and perhaps not absolutely demonstrable, he thinks seems to meet the conditions of a satisfactory explanation as well as any that has thus far been proposed. "It is impossible, of course," he remarks, "to anatomically prove the initial nervous lesion in many cases of tetanus, and to follow it through the nerve trunks to the nervous centres from which the first manifestations of serious trouble generally appear. The only thing that can be done is to take the facts that are known, and find a hypothesis which will satisfactorily account for them, both singly and in their connection with each other, in the general *symptom-complex* of the disease."

He relates a rather typical case showing many of the usual features of the disease in its acute form, reviews the phenomena in that case, in the order in which they made their appearance, and, after discussing them, infers that the course of the great majority of cases of tetanus may be stated as follows:—

"1. A peripheral wound involving the sensitive nervous fibres and causing an irritative local lesion—a neuritis.

"2. Transmission of this irritation, either merely as such, or as actual inflammation, through the nerve trunk and the gray matter of the cord to the medulla and pons, and possibly to the higher reflex centres in the optic thalamus and corpora quadrigemina, or perhaps even to the cortical motor centres of the brain.

"3. Reflection of this irritation along motor nerves, at first only the trigeminus and accessory, then gradually involving other and spinal nerves and producing tonic contraction of nearly all the muscles of the trunk. This is the condition till death, in many cases of the disease, but in others convulsions appear in a late stage of the disease.

"Death may occur from exhaustion, asphyxia, or paralysis of the heart. This latter is probably due to involvement of the cardiac innervation in the disease, and to direct implication of the nucleus of the vagus nerve, although it may possibly be due to a cardiac tetanus.

"These, stated in the briefest and baldest manner, seem to me to contain the principal points of the pathology of tetanus."

Osteo-aneurism of the Inferior Maxilla; Ligature of the Left External Carotid and Right Common Carotid Arteries.—Dr. EUGENE PEUGNET relates (*Medical Record*, Feb. 5) an interesting case of this, and concludes with the following remarks:—

"This unique case, though unfortunate in its results, throws considerable light on the subject of the ligature of the carotids, and resolves itself into the following aphorisms:—

"1. If an accurate diagnosis had been made when the case first came under my observation, removal of the diseased segment of the inferior maxilla should have been attempted.

"2. The indications under the circumstances were undoubtedly the ligation of both external carotid arteries.

"3. The recurrent hemorrhage, owing to the anastomosis between the middle meningeal (internal maxillary), anterior meningeal (internal carotid), and the lachrymal (ophthalmic) arteries; also to the one between the nasal or spheno-palatine (internal maxillary) and nasal branches of the ethmoidal (ophthalmic) arteries; again to that of the lachrymal (ophthalmic) with the deep temporal branches of the internal maxillary artery. The more remote anastomosis between the temporal (external carotid) and ophthalmic arteries is hardly worthy of consideration—demonstrates that an error was made in not *simultaneously* ligating on left side the *internal carotid*, which would have thus cut off the direct current from the basilar to the common carotid artery, thus affording a greater check to the development of the recurrent circulation.

"4. In young subjects the ligature of both common carotids can be performed with comparative safety, as the collateral circulation through the vertebrals rapidly compensates the loss caused by the ligation of the former.

"5. The mode of procedure adopted by me on the right side, although successful, demonstrates that it is best to seek the bifurcation; yet we would have here made an unsuccessful search for it, and would have been compelled to have placed the ligature at the seat of election, or else to have ligated the artery above the digastricus; therefore above the common origin of the facial and lingual arteries, and below its division into the internal maxillary and temporal arteries.

"6. The secondary hemorrhage on left side arose from the cardiac side of ligature, as the distal extremity of the external carotid was completely closed by the clot prior to its removal from the artery. It is barely possible that the anterior pharyngeal may have slightly influenced it.

"7. The neuralgia in the inferior dental nerve, controlled by compression of the common carotid on left side, shows that it was caused by the pressure of the aneurismal sac on the nerve.

"8. The question arises as to the predisposing cause of this aneurism: was it due to the developments of the molar teeth on left side, inducing an increased circulatory action on that side, which, although anatomically normal, was, owing to the anatomical deficiency on the right side, physiologically excessive?

"9. The control of the secondary hemorrhage by the combination of *veratrum viride* and *digitalis* demonstrates its value in similar cases; the first through the vaso-motors acting directly on the arterioles, the latter through the pneumogastrics on the heart."

Hypodermic Alimentation.—Dr. JAS. T. WHITTAKER (*The Clinic*, Jan. 22, 1876) reports a case of supposed gastric ulcer, in which alimentation was effected by hypodermic injection. The patient was a girl, æt. 20, who could not retain the blandest articles of food taken into the stomach, and nourishing enemata were equally rejected. As the patient had become extremely emaciated, temperature high, pulse feeble, almost imperceptible, and death imminent, on the evening of Jan. 9th Dr. W. commenced hypodermic injections of a teaspoonful of milk alternated with beef extract every two hours. These were continued for three days. "Under their use, *the patient taking no food whatever by the mouth or rectum*, the temperature declined, the pulse became fuller and stronger, and the delirium and pain disappeared. On the evening of the 9th she took and retained about two ounces of milk. January 10th, the

milk by the mouth again causing pain, hypodermic alimentation was resumed, and the milk was substituted by cod-liver oil, two drachms every two hours. These hypodermic injections of cod-liver oil were continued until January 12, when the patient was able to take food without pain or nausea. From that date up to to-day, Jan. 17, there has been no pain nor nausea. She walks about the ward, takes her meals regularly, though as yet without appetite, and is in perfectly good spirits.

"During the progress of the case she received sixty-eight injections in different parts of the body. On one day as much as four ounces of cod-liver oil was introduced in eight injections. Two small abscesses formed, each from the milk. No ill effects followed the injection of cod-liver oil. The injections were made slowly with a syringe holding a teaspoonful, the body of the instrument being unscrewed from the tube for repeated filling. The oil injections were absolutely free from pain. The small abscesses referred to were discharged by incision day before yesterday, and occasion no further trouble."

The first attempts, Dr. W. remarks, to secure subcutaneous absorption were made by Menzel and Perco, and were reported in the *Wiener Medizinische Wochenschrift*, April 17, 1869. These observers found that one ounce of fluid fat injected under the skin of a dog disappeared in 48 hours, without any signs of local reaction. Solutions of sugar, milk, and yolk of eggs disappeared in the same way. But one experiment was made on man, and that with only nine grains of aliment. Stricker and Oser experimented also with peptones. The only complete and satisfactory experiment on man was made by Dr. Krueg, physician to a private insane asylum, in the case of a Hungarian inmate, aged 57, who was bent on suicide by starvation. For 27 months the individual was fed through a tube inserted into the stomach. On one occasion the resistance of the patient became so violent as to frustrate all attempts at alimentation. He became breathless and blue in the face, and the food was rejected by the side of the tube immediately after its injection. With the exception of soup on one occasion, the man passed ten days without food. Dr. Krueg now commenced the injection of olive oil subcutaneously. A syringe holding 15 cubic ctmtr. was connected with the perforated needle by a long rubber tube, so that the struggles of the patient could not derange the injection. The operation was practised only twice a day. At first the oil was inserted at five apertures, later at only two. It was forced in drop by drop, so that from half an hour to an hour was occupied in emptying the syringe. By this slow injection pain was avoided, and all subsequent reaction. The injections were made mostly into the foot, some over the abdomen, and some over the side. The experiment lasted two months. The longest time of sustenance by hypodermic alimentation alone was twenty days. The patient was completely recovered from starvation, and finding all his attempts at suicide balked in this way, gave up further efforts, and fed himself regularly by the mouth. Singular points in connection with this case, and worthy of special mention as indicative of the nutritive efficacy of the method employed were the complete disappearance of the chloroform odour of inanition, and the subsequent aversion to fats as food. The patient was not aware that fats had been injected. He believed that only beef extract had been used. This most interesting case is recorded in full in the *Wiener Medizinische Wochenschrift*, August 21, 1875.

An account of these experiments will also be found in the *Revue des Sciences Médicales* (Jan. 1876, pp. 106-7), with the details of Dr. Krueg's case.

International Medical Congress, Philadelphia, 1876.—The Centennial Medical Commission, which has charge of the arrangements for the Congress, has just issued a preliminary programme, in which it is announced that the Congress will be formally opened at noon on Monday the 4th of September next, in the University of Pennsylvania.

The following addresses will be delivered before the Congress in general meeting:—

Address on Medicine, by Austin Flint, M.D., Prof. of Prac. of Medicine in Bellevue Hosp. Med. Coll., New York.

Address, by Dr. H. Lebert, Prof. of Clin. Med. in University of Breslau.

Address on Hygiene and Preventive Medicine, by Henry I. Bowditch, M.D., Pres. of State Board of Health of Mass.

Address on Surgery, by Paul F. Eve, M.D., Prof. of Surgery in Univ. of Nashville.

Address on Obstetrics, by Theophilus Parvin, M.D., Prof. of Obstetrics in Coll. of Phys. and Surgeons of Indiana.

Address on Medical Chemistry and Toxicology, by T. G. Wormley, M.D., Prof. of Chemistry in Starling Med. Coll., Columbus, Ohio.

Address on Medical Biography, by J. M. Toner, M.D., of Washington, D. C.

Address on Medical Education and Medical Institutions, by N. S. Davis, M.D., Prof. of Practice of Med. in Chicago Med. Coll.

Address on Medical Literature, by L. P. Yandell, M.D., late Prof. of Phys. in Univ. of Louisville.

Address on Mental Hygiene, by John P. Gray, M.D., Supt. and Physician to New York State Lunatic Asylum, Utica.

Address on Medical Jurisprudence, by Stanford E. Chaillé, M.D., Prof. of Phys. in Univ. of Louisiana.

Discussions on scientific subjects will be opened in the Sections as follows:—

Section I. MEDICINE.—*1st Question.* Typho-malarial Fever; is it a Special Type of Fever? Reporter, J. J. Woodward, M.D., Assist. Surg. U. S. A. *2d Question.* Are Diphtheritic and Pseudo-membranous Croup Identical or Distinct Affections? Reporter, J. Lewis Smith, M.D., Phys. to New York Infants' Hosp. *3d Question.* Do the Conditions of Modern Life favour specially the Development of Nervous Diseases? Reporter, Roberts Bartholow, M.D., Prof. of Practice of Med. in Med. Coll. of Ohio. *4th Question.* The Influence of High Altitudes on the Progress of Phthisis. Reporter, Charles Denison, M.D., of Denver, Colorado.

Section II. BIOLOGY.—*1st Question.* Microscopy of the Blood. Reporter, Christopher Johnston, M.D., Prof. of Surgery in Univ. of Maryland. *2d Question.* The Excretory Function of the Liver. Reporter, Austin Flint, Jr., M.D., Prof. of Phys in Bellevue Hosp. Med. Coll., New York. *3d Question.* Pathological Histology of Cancer. Reporter, J. W. S. Arnold, M.D., Prof. of Phys. in Univ. of City of New York. *4th Question.* The Mechanism of Joints. Reporter, Harrison Allen, M.D., Prof. of Comp. Anat. in Univ. of Penna.

Section III. SURGERY.—*1st Question.* Antiseptic Surgery. Reporter, John T. Hodgen, M.D., Prof. of Clinical Surgery in St. Louis Med. Coll. *2d Question.* Medical and Surgical Treatment of Aneurism. Reporter, W. H. Van Buren, M.D., Prof. of Surgery in Bellevue Hosp. Med. Coll., New York. *3d Question.* Treatment of Coxalgia. Reporter, Lewis A. Sayre, M.D., Prof. of Orthopædic Surgery in Bellevue Hosp. Med. Coll., New York. *4th Question.* The Causes and Geographical Distribution of Calculous Diseases. Reporter, Claudius H. Mastin, M.D., of Mobile, Ala.

Section IV. DERMATOLOGY AND SYPHILOLOGY.—*1st Question.* Variations in Type and in Prevalence of Diseases of the Skin in Different Countries of Equal Civilization. Reporter, James C. White, M.D., Prof. of Dermatology in Harvard Univ. *2d Question.* Are Eczema and Psoriasis Local Diseases, or are they Manifestations of Constitutional Disorders? Reporter, L. D. Bulkley, M.D., of New York. *3d Question.* The Virus of Venereal Sores; its Unity or Duality. Reporter, F. J. Bumstead, M.D., late Prof. of Venereal Diseases at Coll. of Phys. and Surgeons, New York. *4th Question.* The Treatment of Syphilis, with Special Reference to the Constitutional Remedies appropriate to its various Stages; the Duration of their Use, and the Question of their Continuous or Intermittent Employment. Reporter, E. L. Keyes, M.D., Adjunct Prof. of Surgery in Bellevue Hosp. Med. Coll., New York.

Section V. OBSTETRICS.—*1st Question.* The Causes and the Treatment of Non-puerperal Hemorrhages of the Womb. Reporter, W. H. Byford, M.D., Prof. of Obstetrics in Chicago Med. Coll. *2d Question.* The Mechanism of Natural and of Artificial Labour in Narrow Pelves. Reporter, Wm. Goodell, M.D., Clin. Prof. of Diseases of Women in Univ. of Penna. *3d Question.* The Treatment of Fibroid Tumours of the Uterus. Reporter, Washington L. Atlee, M.D., of Philadelphia. *4th Question.* The Nature, Causes, and Prevention of

Puerperal Fever. Reporter, William T. Lusk, M.D., Prof. of Obstetrics in Bellevue Hosp. Med. Coll., New York.

Section VI. OPHTHALMOLOGY.—*1st Question.* The Comparative Value of Caustics and of Astringents in the Treatment of Diseases of the Conjunctiva, and the Best Mode of Applying them. Reporter, Henry W. Williams, M.D., Prof. of Ophthalmology in Harvard Univ. *2d Question.* Tumours of the Optic Nerve. Reporter, H. Knapp, M.D., of New York. *3d Question.* Orbital Aneurismal Disease and Pulsating Exophthalmia; their Diagnosis and Treatment. Reporter, E. Williams, M.D., Prof. of Ophthalmology in Miami Med. Coll. of Cincinnati. *4th Question.* Are Progressive Myopia and Posterior Staphyloma due to Hereditary Predisposition, or can they be induced by Defects of Refraction, acting through the Influence of the Ciliary Muscle? Reporter, E. G. Loring, M.D., of New York.

Section VII. OTOTOLOGY.—*1st Question.* Importance of Treatment of Aural Diseases in their early Stages, especially when arising from the Exanthemata. Reporter, Albert H. Buck, M.D., of New York. *2d Question.* What is the Best Mode of Uniform Measurement of Hearing? Reporter, Clarence J. Blake, M.D., Instructor in Otology in Harvard Univ. *3d Question.* In what Percentage of Cases do Artificial Drum-membranes prove of Practical Advantage? Reporter, H. N. Spencer, M.D., of St. Louis.

Section VIII. SANITARY SCIENCE.—*1st Question.* Disposal and Utilization of Sewage and Refuse. Reporter, John H. Rauch, M.D., late Sanitary Supt. of Chicago, Ill. *2d Question.* Hospital Construction and Ventilation. Reporter, Stephen Smith, M.D., Prof. of Orthopædic Surgery in Univ. of City of New York. *3d Question.* The General Subject of Quarantine, with Particular Reference to Cholera and Yellow Fever. Reporter, J. M. Woodworth, M.D., Supervising Surgeon-General U. S. Marine Hospital Service. *4th Question.* The Present Condition of the Evidence concerning "Disease-germs." Reporter, Thomas E. Satterthwaite, M.D., of New York.

Section IX. MENTAL DISEASES.—*1st Question.* The Microscopical Study of the Brain. Reporter, Walter H. Kempster, M.D., Phys. and Supt. of Northern Hosp. for Insane, Oshkosh, Wis. *2d Question.* Responsibility of the Insane for Criminal Acts. Reporter, Isaac Ray, M.D., of Philadelphia. *3d Question.* Simulation of Insanity by the Insane. Reporter, C. H. Hughes, M.D., of St. Louis, Mo. *4th Question.* The Best Provision for the Chronic Insane. Reporter, C. H. Nichols, M.D., Physician and Supt. of Government Hospital for Insane, Washington, D.C.

Gentlemen intending to make communications upon scientific subjects, or to participate in any of the debates, are requested to notify the Commission before the first of August, in order that places may be assigned them on the programme.

In order to facilitate debate, there will be published on or about June 1st the outlines of the opening remarks by the several Reporters. Copies may be obtained on application.

All communications must be addressed to the appropriate Secretaries at Philadelphia.

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NORTON FOLSOM, Resident Physician.

Massachusetts General Hospital.

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